THE ARCHITECT & BUILDING NEWS

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- SECONDARY SCHOOL, ESSEX
- FURNITURE FACTORY, BIRMINGHAM
- INFORMATION DIGEST

PUBLISHED IN LONDON SINCE 1854

WHERE SIMPLE OR COMPLICATED SCHEMES OF VENTILATION ARE INSTALLED, AND THE OPERATION IS REQUIRED, BY REMOTE CONTROL OR OTHERWISE, AND THE WINDOWS HAVE ANY OF THE FOLLOWING CHARACTERISTICS :—

- OPENING OUTWARDS
- OPENING INWARDS
- TOP HUNG
- HORIZONTAL CENTRE-HUNG
- BOTTOM HUNG
- VERTICAL PIVOT HUNG
- SIDE HUNG
- HORIZONTAL SLIDING
- VERTICAL SLIDING

The illustration shows One Set of Electrically operated Twin Tension Rod Gear with Counter-Balance Unit operating one continuous opening light, 74' 0" long x 5' 0" deep. Note the Spiral Balance Wheel fitted at the end Sprocket.

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SKYLIGHTS, LANTERN LIGHTS, CLERESTORY LIGHTS, FANLIGHTS, SIDE WALL LIGHTS IN WOOD OR METAL WINDOWS, OR IN PATENT GLAZING, ROOF LIGHTS AND BENCH LIGHTS IN GREENHOUSES, DAMPERS, TRAP DOORS, SHIPS SKYLIGHTS, ETC.

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by WILLIAM NEWMAN & SONS LTD.

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GEARING DEPT. BRANCH WORKS 3, WELLHEAD LANE, PERRY BARR, BIRMINGHAM

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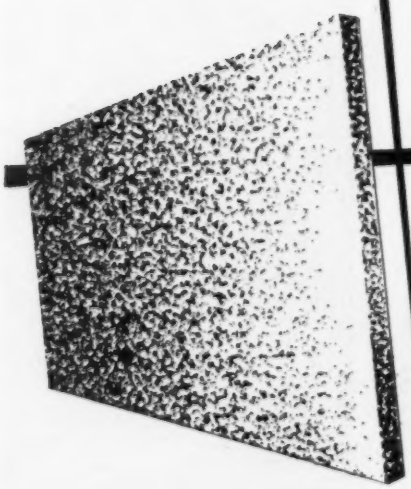

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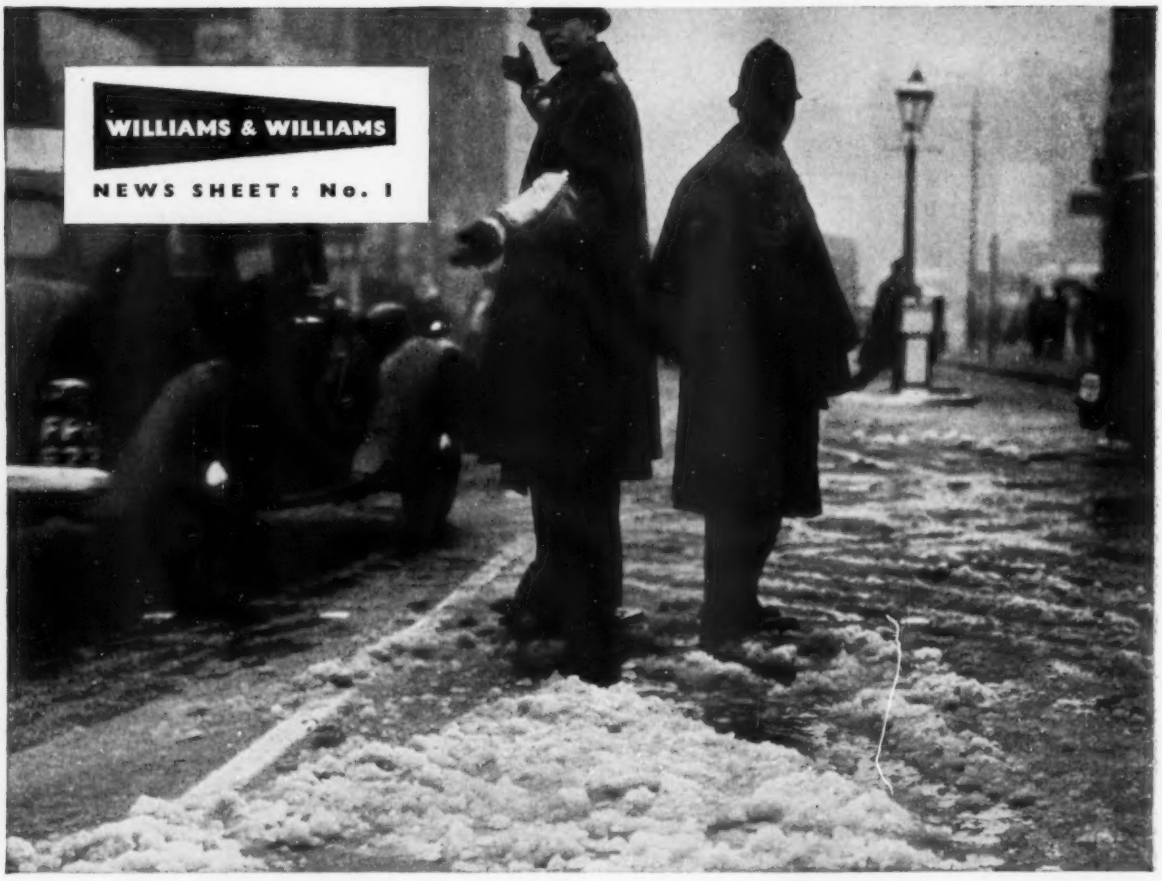


WALLSPAN BEATS THE WEATHER

Londoners will remember the winter of 1955/6 as the coldest on record. During one of the more chilly spells when the thermometer stood at eleven below, the new Bata Store in Oxford Street was in a near-completed state—the exterior finished but for the cladding of the main facade.

Fortunately, the architects had specified 'Wallspan' for this contract, work went ahead as planned and the building was ready for occupation on the scheduled day. In these conditions conventional building techniques would have come to a complete standstill. Using 'Wallspan', no delay was experienced (except on the occasions when the fixers' bare hands froze to the aluminium 'Wallspan' members) and the cladding was completed in six working days.

WHY WALLSPAN WAS USED

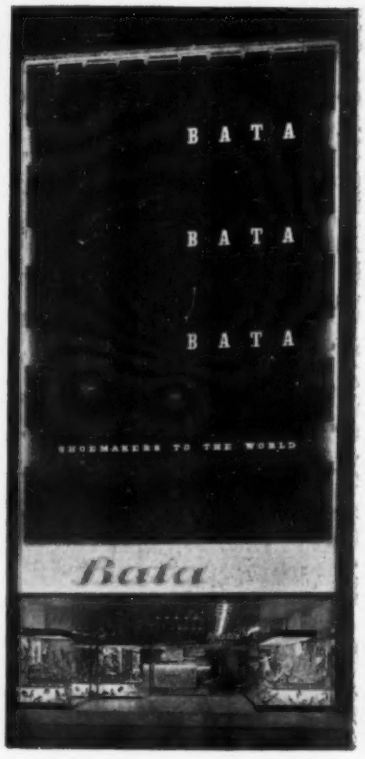
A glass curtain wall was decided upon for three reasons: speed of construction, light weight, and easy maintenance. Of the various methods considered, 'Wallspan' was thought to meet all three considerations most effectively. Lightweight, all-aluminium 'Wallspan' members with their clean lines and crevice-free profiles used in conjunction with glass-faced infilling panels fulfil points 2 and 3—while in the particular circumstances point No. 1 was more than amply justified!

FURTHER DESIGN ADVANTAGE

When the project was still on the drawing board a further advantage came to light. The architect of the Bata Store does a great deal of shop design where one of the obvious problems is that of integrating the Company name as part of the overall design of the front.

The 'Wallspan' 'grid' offered a happy solution in this case where it is used as a framework for some very large scale typography. The effect can be judged by this after-dark photograph.

Bata Store, London. Architects: Bronek Katz and R. Vaughan.

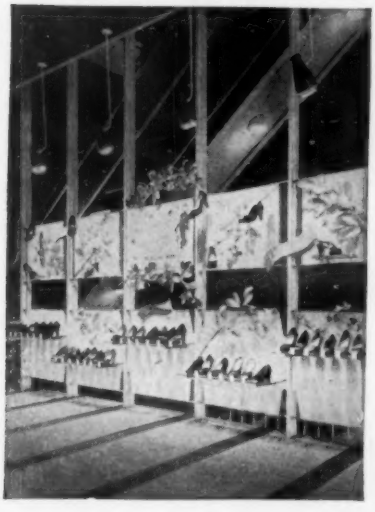


WHAT MANCHESTER DOES TO-DAY!

But long before the London store was started, 'Wallspan' had been used on a small scale but in a very interesting way in another Bata shop in Manchester. As well as a more-or-less conventional application as a feature window in the main facade, it has been taken *inside* to form a part-glazed display screen to the staircase. Using 'Wallspan' in this way offers great scope, especially for showrooms, shops, reception areas, etc. where it is desired to carry the theme of the exterior decor within doors to impart a feeling of continuity to inter-related areas. Since the 'Wallspan' is protected from the weather the range of infilling materials is greatly extended, blank spaces can be left in the grid to be occupied by display fitments—and so on. In such circumstances the 'Wallspan' members themselves can be colour anodized or painted.

∧ *Bata Store, Manchester. Architects: Bronek Katz and R. Vaughan.*

Interior of the Manchester Store, showing use of Wallspan for screening to staircase well, incorporating display fitments. ∨



THE BUGBEAR OF EXTERIOR MAINTENANCE

Meyer Dumore Factory, Park Royal. Architects: Mark Jennings, Son & Partners, (Architect-in-charge: H. M. Cunningham A.R.I.B.A.)

Presumably when all our cities are 'smokeless zones' the constant deterioration of fabric through atmosphere corrosion will cease to be the pressing problem it is now. Until that long-wished-for day, the use of 'Wallspan' for outside walls goes a long way to solving it.

The aluminium alloy from which the 'Wallspan' members are extruded is extremely resistant to corrosion. Even in 'heavy' industrial atmospheres, once initial oxidation has taken place, subsequent pitting is of negligible proportions. In fact, the oxide layer which forms during the first few months of exposure acts as an extremely efficient barrier against the further inroad of corrosive airborne agents. For this reason it is better not to attempt to keep the 'Wallspan' in 'new' condition by means of abrasives but merely to wash off surface dirt with a mild detergent and water, leaving the oxide layer intact.

The same treatment is recommended for aluminium windows. It will be readily appreciated that in these circumstances—'Wallspan' with aluminium windows and a suitable glass or aluminium-faced infilling—maintenance is reduced to large-scale window cleaning for which provision may be made by installing a cradle runway around the eaves of the building. This has been done at the Meyer Dumore Factory, at Park Royal, illustrated above.

Dining room Extension to the 'White Hart' Hotel, Sonning. Architect: Eric G. V. Hives, L.R.I.B.A., Chartered Architect.

STANDARD WINDOWS IN A PERIOD SETTING

The 'White Hart' Hotel at Sonning—always a popular resort for Thames-side tourists—has recently opened a new dining room extension. Briefing to architect included:

1) Extension must harmonize *outside* with existing old building.
2) Extension *inside* must be light and airy.

One aspect of the design that helps to reconcile these diverse requirements is the extensive use of small-pane type BS.990 Standard Metal Windows and Doors (supplied rustproofed by Williams & Williams). White paint emphasizes the glazing bars to give that 'cottage casement' look. Slim metal sections let in lots of light and air . . . And standard windows are as economical as may be!

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Introducing a sight we hope will warm the cockles of your heart. Roger Evans—the-new-Area-Manager-at-Manchester is shown here practising for an intended visit to New Brighton or Blackpool—he hopes. A real Williams & Williams man he is, look you.

WILLIAMS & WILLIAMS

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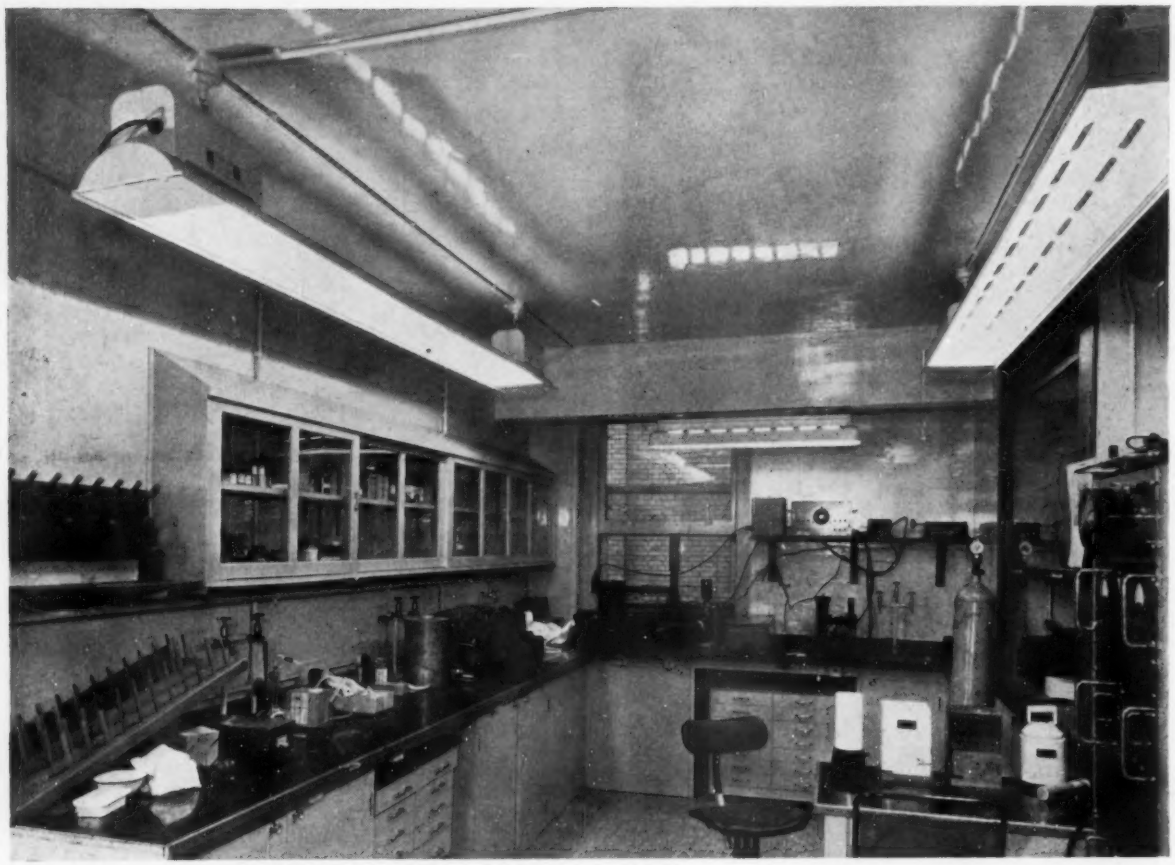

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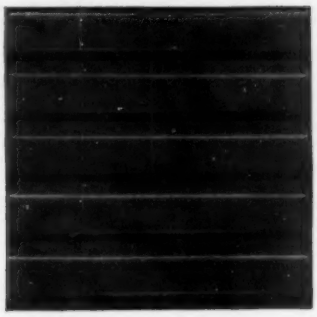

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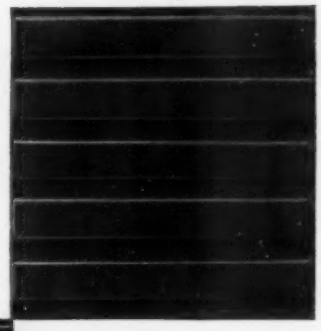
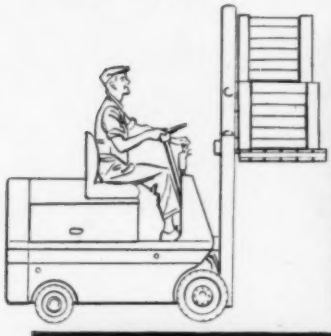
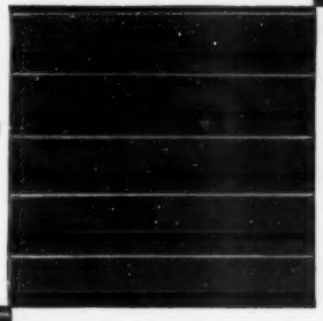






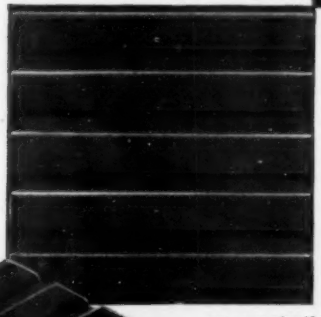
Typical Installations

FACTORIES
Traffic lanes, ramps, store rooms, loading bays.

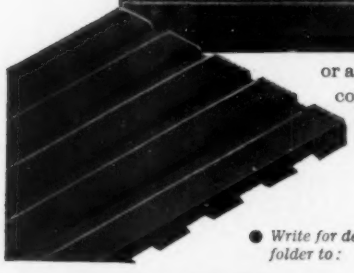
RAILWAY STATIONS
Booking halls, platforms, trucking ways, baggage rooms.

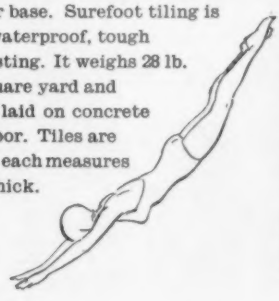
PITHEAD BATHS
Shower and changing rooms.

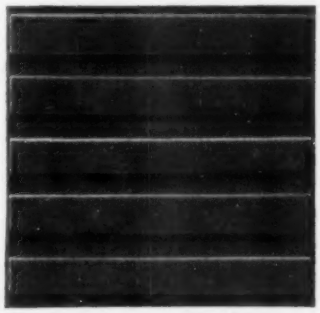
SWIMMING BATHS
Surrounds to pools and changing rooms.



Wet or dry . . . on the level or on the slope . . . Surefoot ribbed-rubber tiles form a robust yet quiet and resilient anti-skid surface. They may be laid as traffic lanes or as complete floor finishes. Besides being functional, the surface ribbing lends an attractive pattern to the floor. Dovetailed grooves on the underside of each tile ensure a firmly 'locked' setting in the mortar base. Surefoot tiling is fully waterproof, tough and lasting. It weighs 28 lb. per square yard and can be laid on concrete or any similar subfloor. Tiles are coloured black and each measures 18" x 18" x $\frac{7}{16}$" thick.







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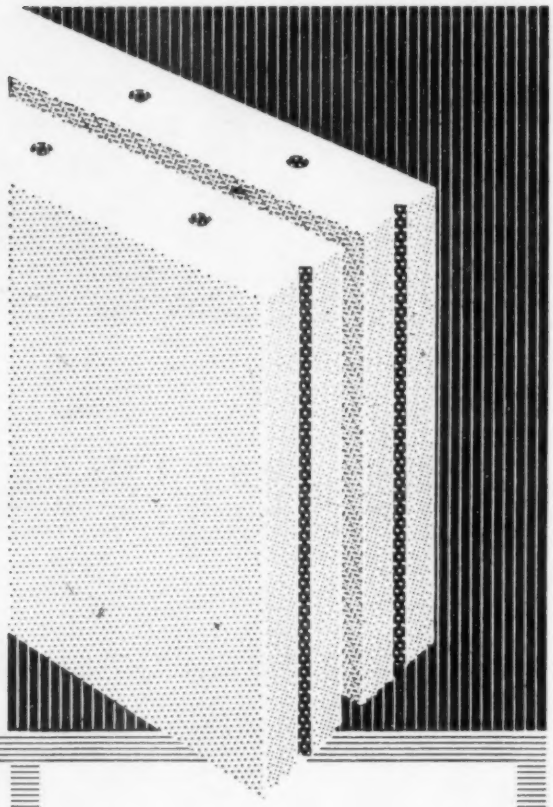

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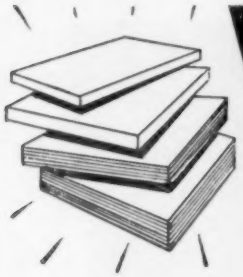

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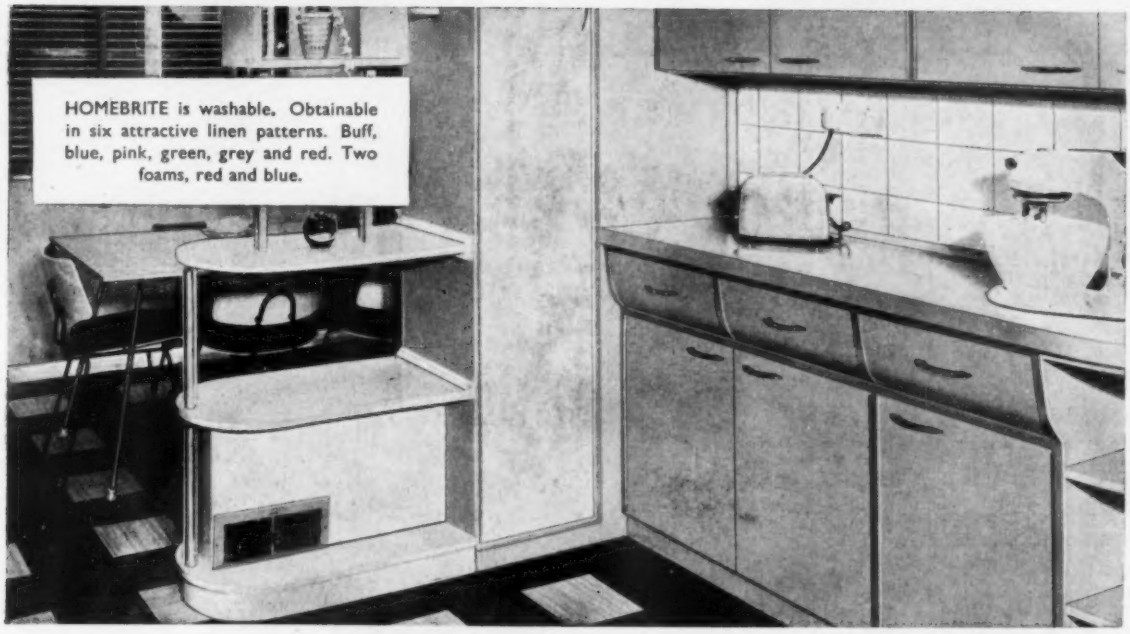
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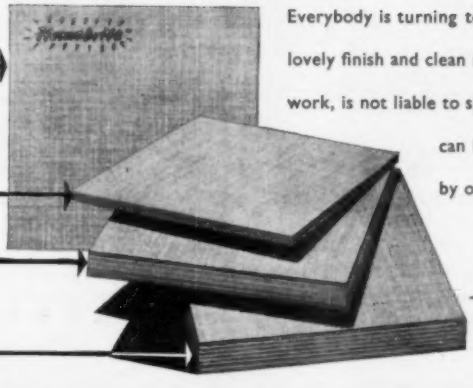

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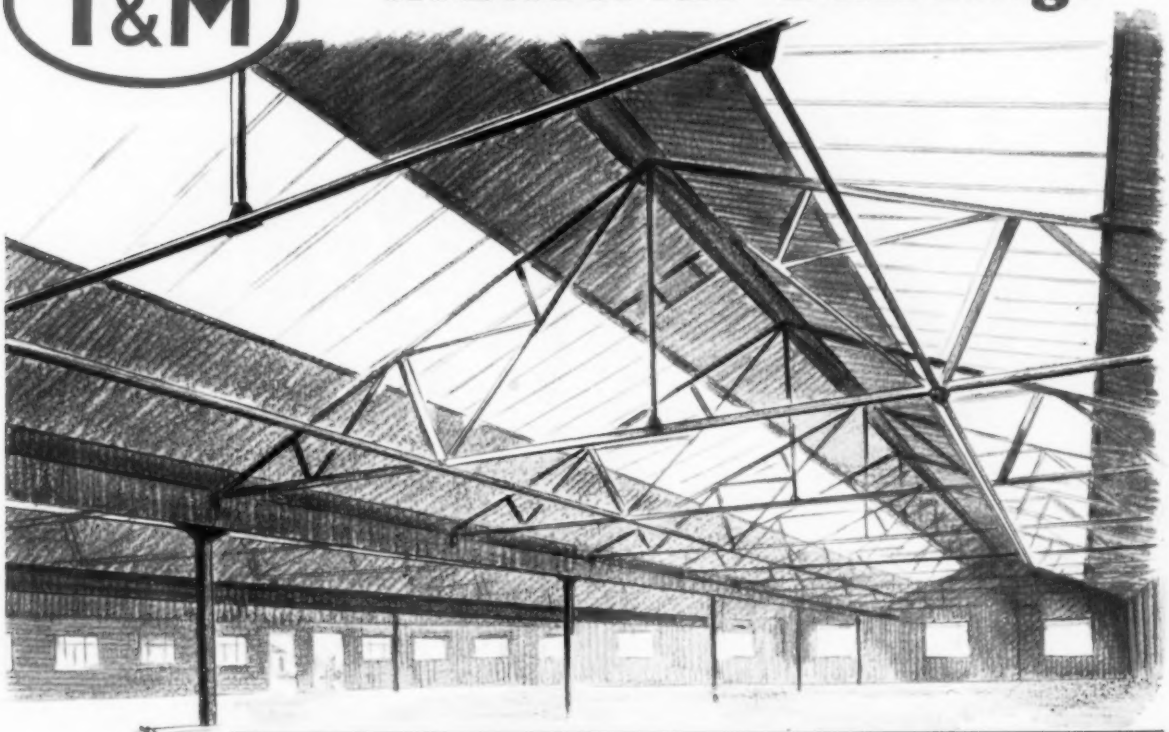

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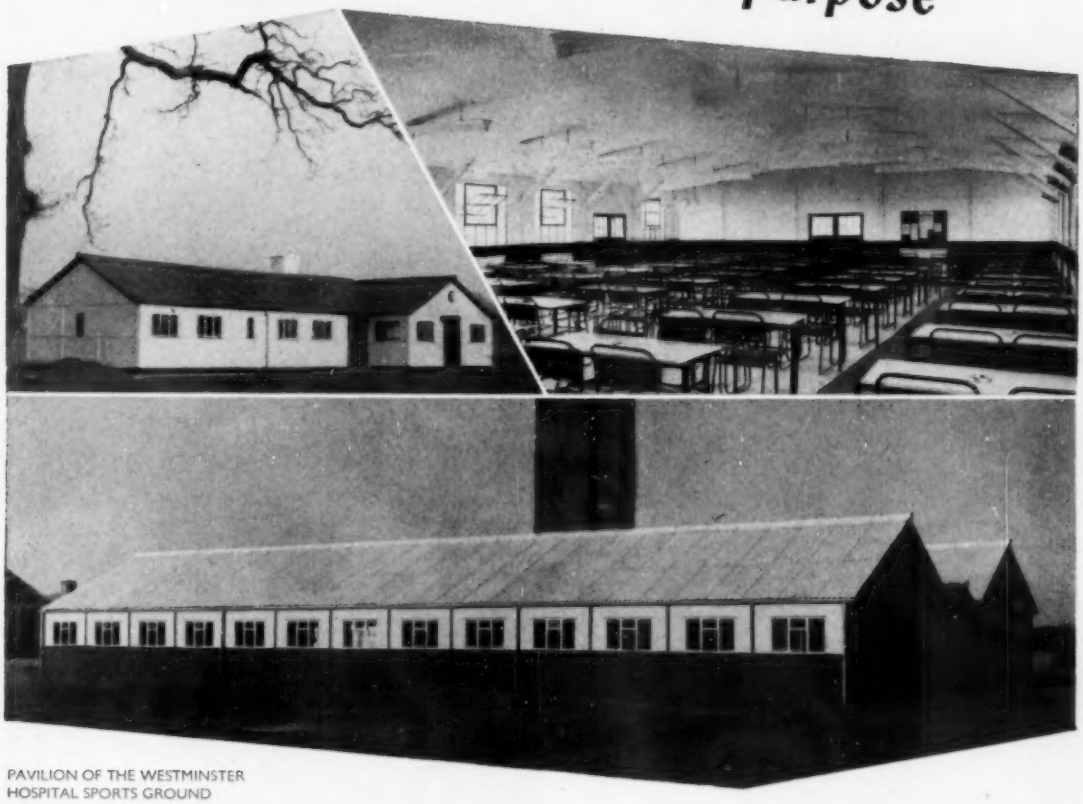

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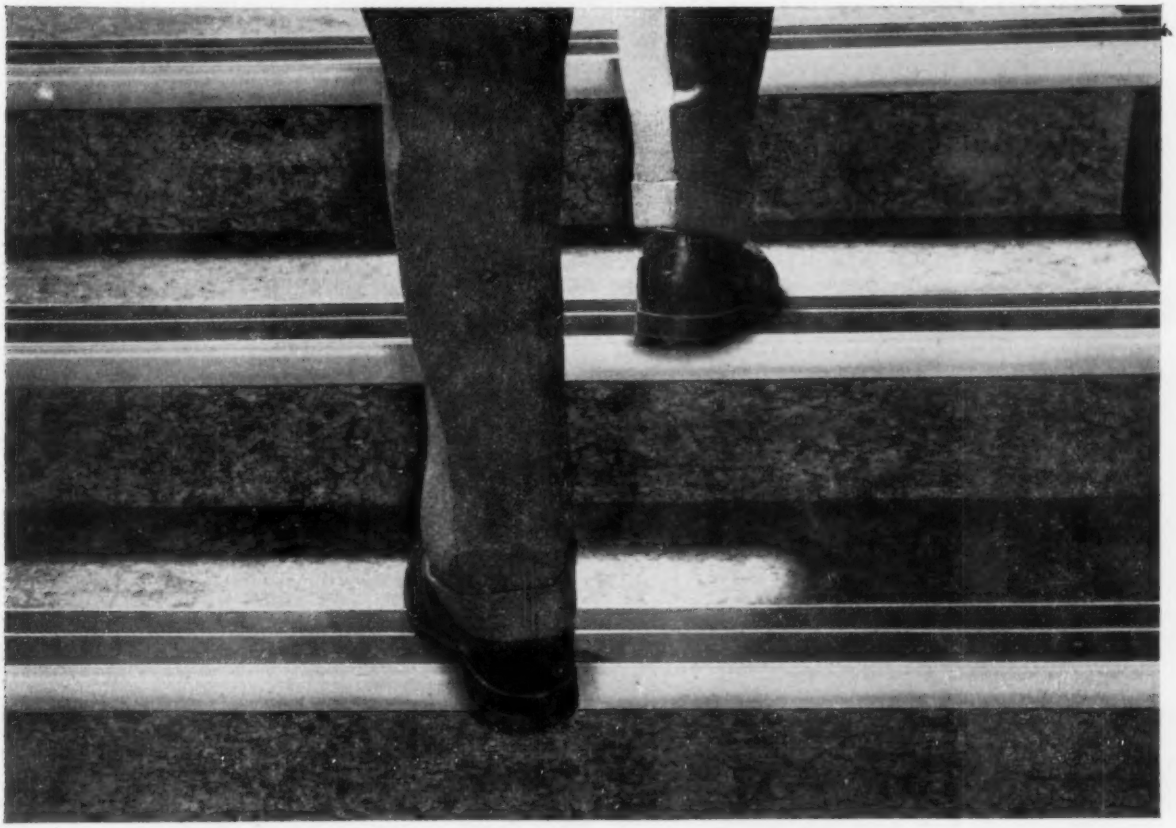

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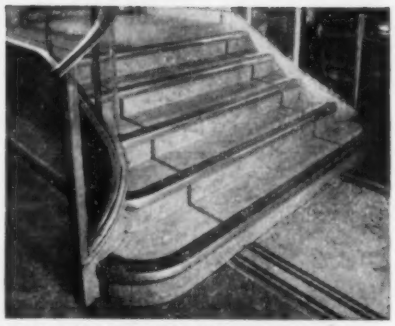
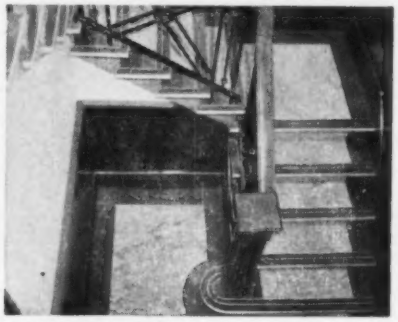


Smart Bros. Ltd., Deansgate Manchester.



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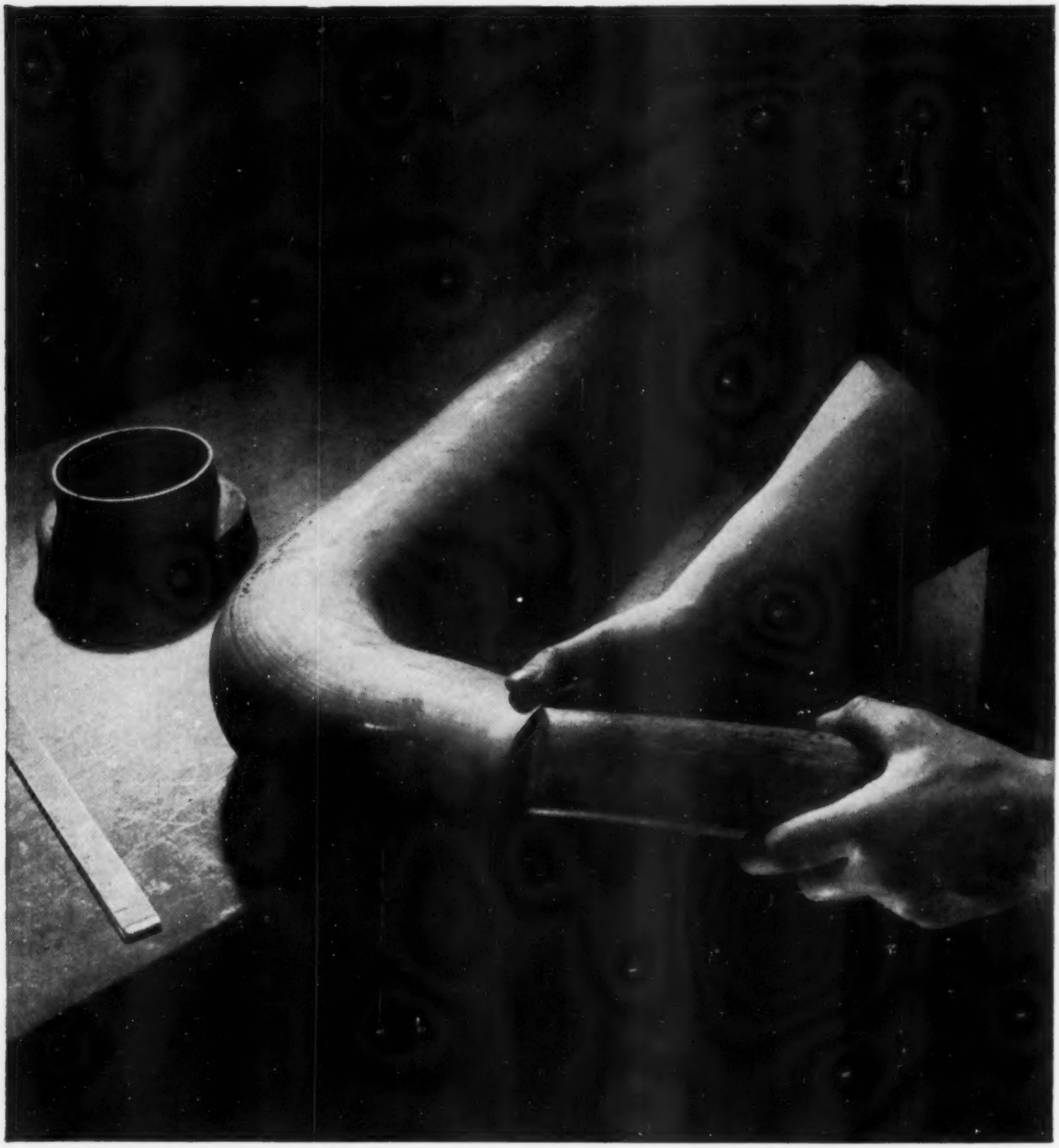
FOR YOUR REFERENCE FILES Illustrated Catalogue in full colour will be sent on request to Stairtreads Dept., Ferodo Limited, Chapel-en-le-Frith, Derbyshire.

FERODO LIMITED · Chapel-en-le-Frith · Derbyshire * *A Member of the Turner and Newall Organisation*



LEAD LASTS

The Council's Technical Information Bureau will gladly help with problems on the use of Lead Sheet and Pipe in building work. Details of the main uses are given in a series of Information Sheets and Bulletins, which can be obtained by applying to the Council.

THE USE OF LEAD PIPE IS A GUARANTEE OF GOOD WORKMANSHIP

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B123

ELLARD

ESTATE

SLIDING DOOR GEAR

The illustration on right shows yet another example of the use of ELLARD "Estate" Sliding Door Gear in the modern dwelling house. See how simple it is to convert a spacious room to one of a cosy and intimate atmosphere. The fingertip smoothness of door action offers immediate reduction of living space when desired with the additional advantage of fuel economy. Elegant appearance, ease of operation and long service are the main selling features of this attractive ELLARD Door Gear. Excellent design, moderate cost and maximum use of floor space make ELLARD Door Gear the obvious choice for both council estates and private houses.

RADIAL

SLIDING DOOR GEAR

Illustration on left shows ELLARD " RADIAL " Sliding Door Gear fitted to a private garage. Sliding doors are of great advantage in protecting cars against damage caused by accidental swinging of hinged doors. In addition, valuable working space is offered where it is most desired at the entrance to the garage. Note also how ELLARD Door Gear provides easy access to and from the garage by a personal entry door. ELLARD "Radial" Sliding Door Gear is low in price and gives long service without maintenance. This gear is also suitable for the larger openings of commercial and industrial garages

OVERDOR

GARAGE DOOR GEAR

ELLARD " Overdor " gear, illustrated on right, represents the best method of operating an overhead-type door, and it requires the minimum space, fixing time and maintenance. An entirely clear threshold is achieved, and both side walls are available for windows or shelves. "Overdor" gear is designed for doors from 6ft. to 7ft. 3ins. high and up to 200lbs. in weight. The door is safely balanced and can be opened and closed with ease. The width of the door is not critical but the construction should ensure that the door does not sag when in the raised horizontal position, and we suggest a maximum width of 10ft. The balance springs impose a maximum force along the jambs, thus relieving the building of all stress until the door is raised, when less than half the weight of the door is supported by the twin top tracks. ELLARD " Overdor " is therefore especially suitable for lightly constructed buildings.

Immediate delivery of ELLARD "Estate", "Radial" and "Overdor" Sliding Door Gear can be obtained from large ironmongers and builders' merchants throughout the country.

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BMJ

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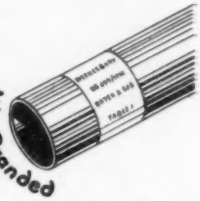

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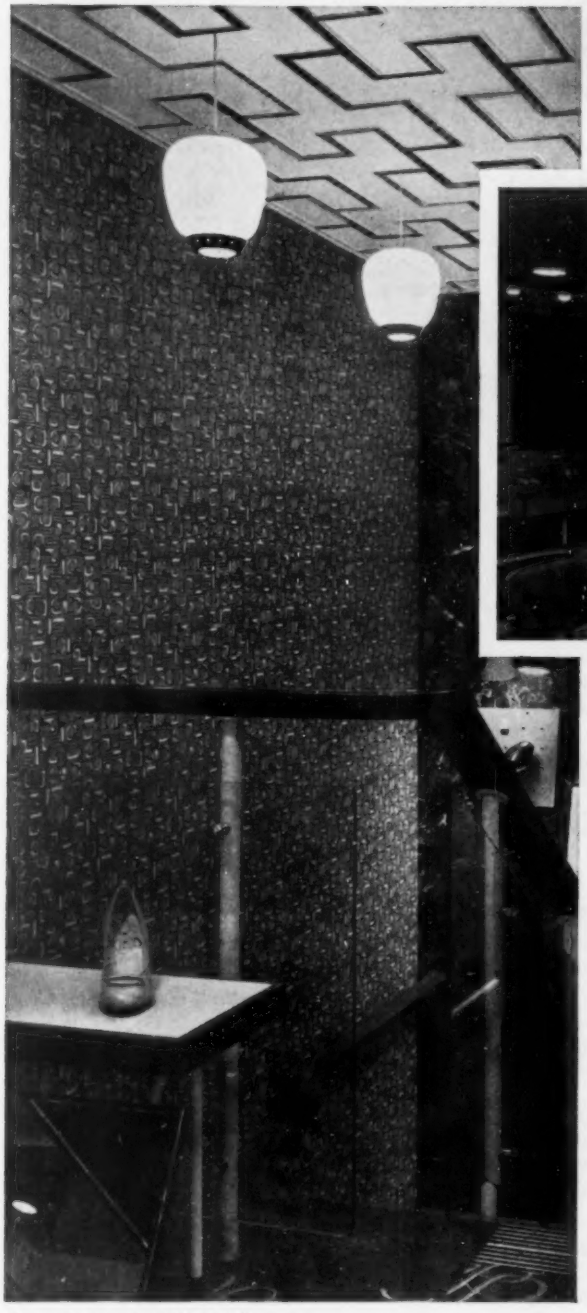
ASSOCIATED COMPANY, GLYNN BROS. LTD, LONDON AND MANCHESTER

Another Dolcis Branch features

Rydura



Dolcis have again specified RYDURA, this time for their new Branch at Charing Cross Road, London. The illustrations show RYDURA used as a wall decoration for the main stairway of the new Dolcis shop. The use of RYDURA is in keeping with the Dolcis policy of modern and attractive shop fitting.

RYDURA, the cotton fabric with the remarkable 'PROFILM' finish, is also being applied equally successfully for seating of all kinds, and for modern furniture decoration, in hotels, restaurants, ships, shops, etc. Available in a wide range of designs and colours, RYDURA has important practical qualities. Easily applied to walls, it can be cleaned with a damp cloth, and is virtually unstainable.

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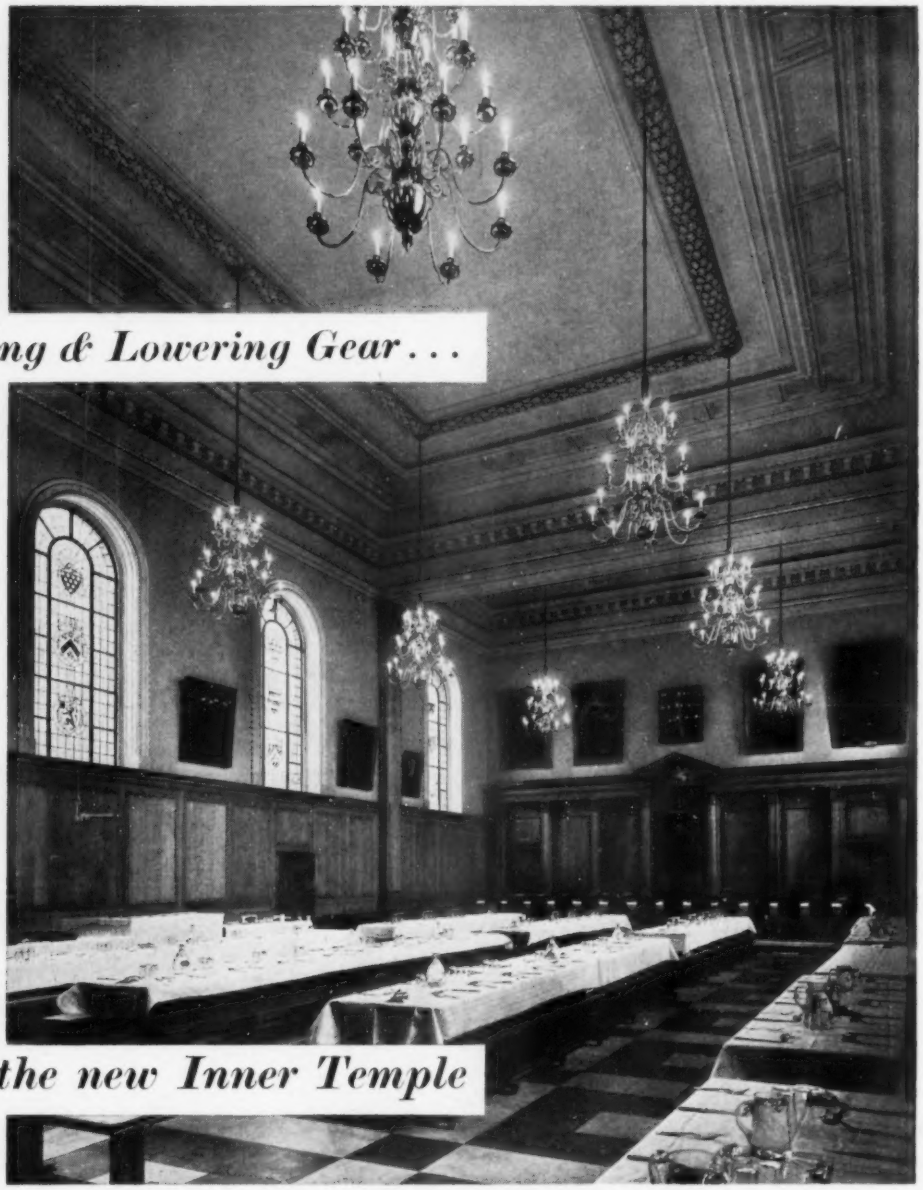

L.E.F. Raising & Lowering Gear . . .

is fitted in the new Inner Temple

THE beautiful Hall of the new Inner Temple is lighted by ten heavy chandeliers weighing about 2cwt each. They are brought down to floor level for convenient maintenance by means of L.E.F. Raising and Lowering Gear.

L.E.F. were consulted at an early stage during the building operations by the Architects (Sir Hubert Worthington, R.A., and T. W. Sutcliffe, Esq., A.R.I.B.A.) and the Contractors (Bower Engineering Works Ltd.) with the result that we were able to supply equipment that was " built in " to the ceiling. All working parts are completely concealed.

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TIB93

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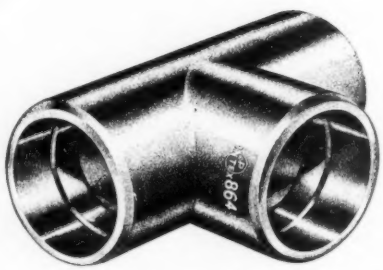

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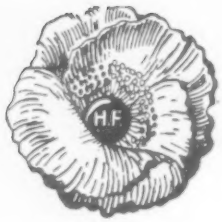
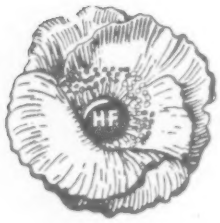


Remembrance Day

Please give generously

To you from falling hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

"In Flanders Fields" — John McCrae (d. 1918)



SATURDAY NOVEMBER 10th

THE UNITED STEEL COMPANIES LIMITED

HEARTH-WARMING FACTS FROM FLAVEL

Essential data on five of the latest, most efficient heating units

WHETHER you're specifying for a single dwelling or an entire estate, there's a Flavel appliance designed to fit almost any standard fireplace. Five of them are shown and briefly described on this page. For fuller details, you are invited to write to Flavels. Their Architectural Advisory Bureau is always ready to give expert advice and information about all Flavel appliances . . . solid fuel grates, boilers, cooker/water heaters, gas-heated clothes-dryer, water heaters, fires and cookers.

The four open fires shown can be supplied with gas burners for rapid and labour saving lighting. In the case of the Fulham Finned Back Boiler Unit, a special attachment is available for heating water when a solid fuel fire is not required.

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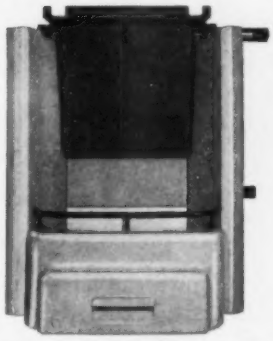
THE 'METRO' BOILER UNIT AND VENTILATING CANOPY

Heats by radiation *and* convection. Cold air enters at sides and is heated and released through louvres. With dampers fully open the boiler unit will supply 10 to 15 gallons of hot water per hour. Output and fuel consumption can be controlled by using dampers.



THE 'FULHAM' FINNED-BACK BOILER WITH 'NEWBOLD' GRATE

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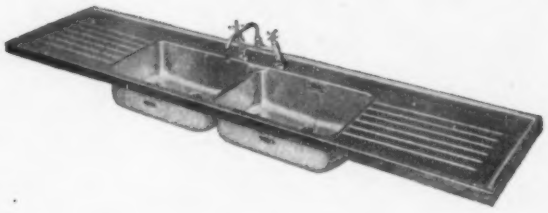

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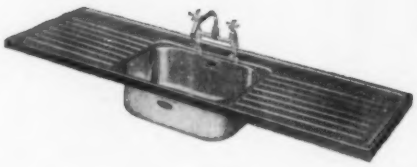

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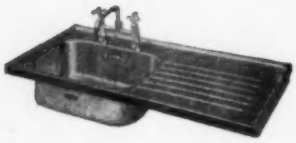
The Stainless Steel Sink Co. Ltd.



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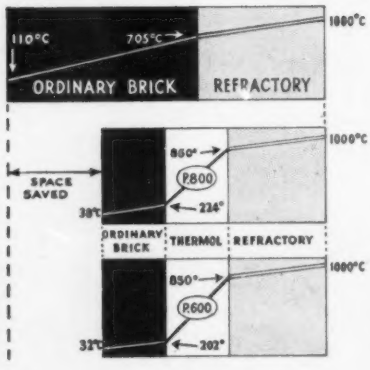

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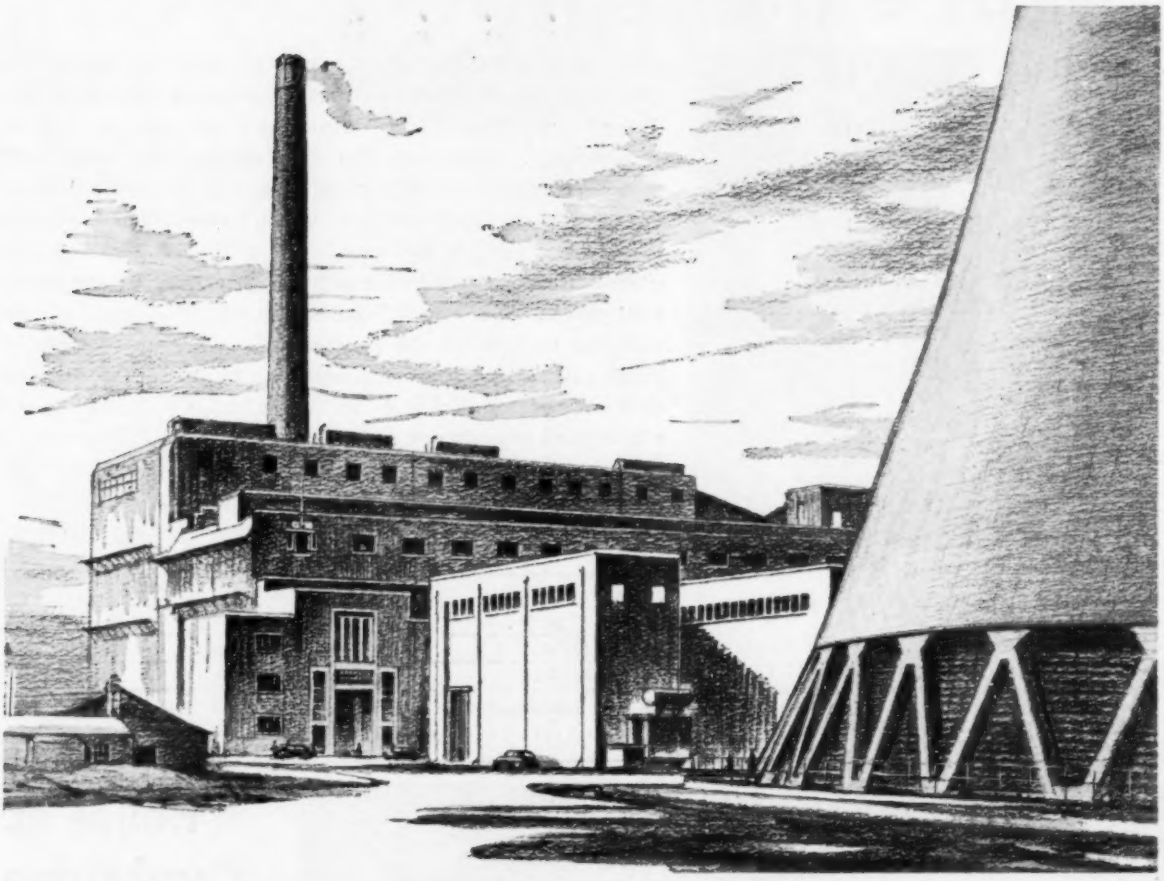

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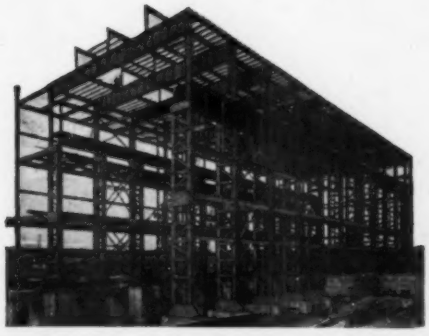

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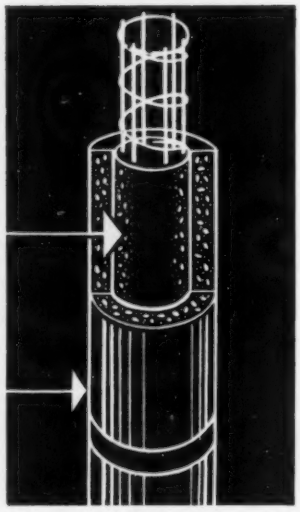

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External dia.	Core dia.	Shell length	* Max. load tons
20 in.	15 in.	3 ft 0 in.	70—100
17½ in.	12 in.	3 ft 0 in.	50—60
14½ in.	10⅞ in.	4 ft 0 in.	30—40

* *Depending on length of pile and strata conditions*

Please write for our latest publications

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Vol. 210 No. 19

THE ARCHITECT & BUILDING NEWS

November 8 1956

The "Architect and Building News" incorporates the "Architect" founded in 1869, and the "Building News," founded in 1854. The annual subscription, Inland and Overseas, is £2 15s. 0d. post paid; U.S.A. and Canada $9.00. Registered as a Newspaper.

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Branch Offices: Coventry: 8-10 Corporation Street; *Birmingham:* King Edward House, New Street; *Manchester:* 260 Deansgate. *Tel.:* Blackfriars 4412 (3 lines), Deansgate 3595 (2 lines); Glasgow: 26B Renfield Street.

THE RIGHT COURSE

IN October last year Mr. Duncan Sandys announced the intention of the Government to end the payment of subsidies on houses built for all general purposes—an intention which was subsequently embodied in the *Housing Subsidies Act*, 1956. At the time when this change was proposed it was felt that to end the payment of subsidies completely and at once might be too abrupt and sudden. Therefore it was decided that for a short period a much reduced subsidy should be paid and that this transitional arrangement would in due course be brought to an end by means of an Order requiring Parliamentary approval. Last Thursday, almost overlooked amid the uproar caused by the Suez crisis, the Minister announced that the Government felt that the time had now come to end the payment of the transitional subsidy, and an Order to this effect has been laid before the House of Commons. The Order is framed to apply to those houses for which a tender or estimate is formally accepted on or after November 2, 1956.

The decision to end payment of subsidies reflects the change that has come over the housing programme since the war. In 1946 the crying need was to build houses, and as many of them as possible. The payment of the generous subsidies to stimulate building was good sense. Moreover, the pattern which wages and prices would take in the years ahead was very difficult to foresee; it was difficult to foresee also, who would need the help of Government money. In that year, 1945/46, a little over £14 million was paid out in housing subsidies. Since that time more than two million new permanent houses have been built, and the housing subsidies bill has grown out of recognition; last year the Exchequer paid out more than £42 million on this account.

In the ten years in which the number of new houses has been steadily growing, it has become apparent who can afford to pay an economic rent, and who cannot. It has become clear that the payment of housing subsidies on the present scale helps relatively few who really need such help, while giving a generous allowance to large numbers of people who are conspicuously able to look after themselves. By last year it was plain that we could no longer sensibly permit the bill for housing subsidies to continue to rise at the rate seen in recent years. The Government's decision to stop the general subsidy and to continue payment of subsidy on special kinds of houses only, was therefore a wise one. Not only this, the Minister showed political courage in making the move.

* * *

There is still a continuing need for more new houses, but the emphasis in housing is rightly shifting elsewhere. Effort must be concentrated upon housing those who leave the great towns and who are displaced by slum clearance; and there is also the difficult question of under-occupation.

There are said to be a great many houses and flats occupied by one or two people but which would comfortably house many more. The occupants remain in such houses often because they cannot obtain more suitable and smaller accommodation elsewhere. With the object of encouraging people to move out of such large houses or flats into smaller places, the Minister has made a new exception in his Order to the effect that the subsidy will continue to be paid, as at present, on houses or flats which have only one bedroom. This concession which is also designed to encourage authorities to build places for old people is certainly a step in the right direction. But it is open to considerable doubt whether on its own, the payment of the present subsidy for one-bedroom houses and flats will contribute materially to reducing under-occupation. That problem is mainly connected with rent restrictions, and the Minister will, doubtless, have this in mind when he frames the legislation he has promised on this subject.

* * *

To end subsidies alone is not enough. These changes if they are to be fully effective must march hand in hand with the more general changes which are needed

in rent reform. The object must surely be to see that everyone pays an economic rent for his house new or old, whether it is publicly or privately provided. There must be two exceptions. Those who are in need of financial assistance must be given it, but not by the indiscriminate, wasteful and anomalous method of a general subsidy. On the other hand building, and therefore rents, must be cheaper in those places where it is desired urgently to build houses and attract people to occupy them. Two things are needed to bring about this state of affairs. Both things are difficult, hazardous and complex. The first thing—the ending of subsidies—the Minister has successfully done. The second thing is to end the rent restriction tangle. The Minister has promised to do this. It is to be hoped that his proposals will be as clear and effective as those of his immediate predecessor were muddled and abortive.

Symbol of the 1958 Brussels Universal and International Exhibition

EVENTS AND COMMENTS

CARACAS!

My picture shows a new $100,000 house designed by Architect Francisco Mayurey, in Caracas, Venezuela. When I first saw it I thought I recognized an English car and for a moment I thought it was an English building passed by one of our more advanced planning authorities. I am sorry I have no interior view to show you. The model of the world over the staircase is a cold water storage tank. The note supplied with the photograph says ". . . it may well be that the tank . . . will set a trend in lavish and beautiful receptacles." Like the one on the Golden Lane flats?

SANITARY FORUM

A good crowd heard Dennis Clarke Hall make some rude remarks about the general design of sanitary fittings in the B.C. Forum last week. Mr. Alan Adams turned away wrath with gentle but telling answers which on the whole showed that *his* company could meet most of Mr. Clarke Hall's criticisms. I think that possibly the B.C. has made a mistake in inviting the more enlightened manufacturers to represent their various trades in this series. I suggest that some of the harder cases might be asked next time.

Once again the discussion went well, but with so wide a subject involving so many different types of manufacture it was impossible to maintain a continuous thread of argument or to pursue any one point very far.

Mr. Edward Mills, supported by Mr. David Medd, wanted better British standards based on performance rather than appearance and lightweight fittings in glass fibre or plastics for fixing to thin partitions. Water undertakings and sanitary authorities were strongly criticized for their lack of progress and their hopelessly out-of-date regulations. A representative from the M.o.W. spoke of interesting experiments with pre-mixed running hot water for hand washing and said that savings in both water and fuel could be made in this way. He also mentioned experiments had been carried out on a very simple foot-operated water waste preventer with the minimum of immersed parts.

Urinals of all kinds were criticized and no one appeared to believe the chairman when he said that in Zürich the asbestos cement urinals in public lavatories, and elsewhere, were devoid of smell, although they had no flushing systems.

THINK OR THWIM

I thought I had strayed into a meeting of A.A. Past-Presidents there were so many of them at last Wednesday's meeting to hear Gontran Goulden's Presidential Address, "Think or Thwim".

For the first time since the war at an A.A. general meeting members were separated into U and Non-U groups, the diners in dinner-jackets, the late-comers in rat-catcher.

There seems to be some difference of opinion about the wisdom of this—one notable member was overheard saying forcibly that he damn nearly came in tweeds as a protest. Most of us took it in our stride.

Poetic justice was, however, meted out to the originator of the idea who is, I believe, the youngest member of the council. His wife who, of course, was really responsible for the whole idea, in bringing down his dinner jacket to the office so that he might change, forgot his studs. The president was able to lend him some. The longer interval before dinner was very sociable, but the evening's programme ran behind time.

Those who knew their Gontran expected a passing reference to the President of the Royal Academy and to British Railways—A.R. and B.R. We were not disappointed in the event.

But though a sprinkling of jokes and invitations bubbled up occasionally the address was a carefully prepared and rehearsed expression of the President's

strongly-held views. It had content and consequently has had a wide Press.

Mr. Goulden said, only better, many of the things I have been hammering at in this column. His demand was for leadership and I imagine is fully reported on another page. Read it, it is full of horrible good sense and, in fact, leadership.

To students not yet case-hardened his words must have sounded harsh.

"Architecture used to be a *gentlemanly art*, now it is *hard business*" (I seem to have heard the same thing said about Sport). "A few lucky people continue to practice in the old manner but it cannot go on much longer. The private client is gradually disappearing, the hydra-headed State or business client will be all that is left".

Goulden dehydrated a good many of the heads. Of boards generally he said that they do not burst out

House in Caracas, Venezuela

spontaneously as art-lovers or people who care about architecture, which made me think of the old joke: "It is forbidden to go beyond this board, by order of the board."

However, there were *some* bodies and individuals in key positions who were exercising their powers of patronage honourably and well. Goulden named them.

Sir Hugh Casson, when he recorded the vote of thanks moved in a very good speech by Past (but not *passé*) President, Bryan Westwood, also strongly supported the getting of the right men into key positions.

For the phillistines in high places the writing is on the wall in the words which closed the President's address (from Sir F. Drake's prayer before the Armada):

"Oh Lord God, when Thou givest to Thy Servants to endeavour any great matter, grant us also to know that it is not the beginning but the continuing of the same until the end it be thoroughly finished which yieldeth the true glory."

Goulden, whose wife, father and brother were there to support him, obviously enjoyed being graced with the badge of office. I thought he looked a bit like a St. Bernard wearing its first cask of brandy round its neck.

COURSE FOR ARCHITECTS

Gontran Goulden in his A.A. address called for a building industry staff college for post-graduate training in various subjects including leadership. A five-day course announced by the York Institute of Architectural Study and will be held from January 4 to 8, 1957. It is called "A Course on Architectural Project Management"—what a mouthful—but the syllabus is excellent, covering a job from start to finish, not forgetting the filing system. My feeling is that the organizers are trying to do too much in the time, but the idea is excellent. The lecturers include: J. M. Austin Smith, J. Grenfell Baines and Eric Bird. At the RIBA Conference at Harrogate in 1955, opinions were expressed that some form of course in office management should be organized. The York Institute held a conference in January, 1956, to discuss this. The present course, which will be repeated from September 16 to 20, is the direct result of this conference.

Let us hope that this will lead to a series of more specialized courses.

PORTUGUESE ARCHITECTURE

Unless there have been any technical hitches the exhibition of modern Portuguese architecture was opened at the Building Centre yesterday by H.E. The Portuguese Ambassador. The exhibition has been organized by the architects of Portugal with the support of the Portuguese Government. It will remain open until November 30 (not 23 as previously stated).

A NATIONAL WATER PARK

Writing in "Time and Tide" last week Sir Hugh Casson strongly supports the "Yachting World's" suggestion that the Solent with its so far unspoiled shores should be declared a National Water Park. He points out that the beauties of Southampton Water, the old gateway to England have now almost disappeared and instead " Refineries, factories, aircraft hangars, power stations, pipelines, storage tanks and housing estates jostle for position along each shore."

The demand for space for technological development connected with "progress" continues and this is bound to be a threat to the shores of the Solent. As Sir Hugh says, "The creeks and estuaries and yachtyards survive, the shore lines look much as they have done for several centuries. You could put a thousand boats within the area and hardly notice them. Southampton Water may be lost. So much has gone already it may be wiser to let the rest go, but only if as a result we are assured that there the line of industrialization will be firmly drawn."

Well said the Yachting World and Sir Hugh!

ABNER

NEWS

Civil Engineers Presidential Address

In his presidential address on Tuesday this week, the new president of the Institution of Civil Engineers, Mr. H. J. F. Gourley said: "I fear the engineering graduate of today is much too inclined to take as his first appointment that which carries the highest salary—more often than not offered by a nationalized industry or a similar undertaking—and such an approach to a professional career is, I consider, one of the factors which accounts for the declining prestige of the civil engineer."

Mr. Gourley criticized these large undertakings on the grounds that they employed young engineers on tasks below their technical capacity, that it was difficult for young engineers to achieve responsible positions in them, and that owing to the tendency to canalize duties, the field covered was narrowed and not broadened.

"I feel that in those organizations there cannot be such opportunities for the exercise of initiative and independence as there are in other spheres," said Mr Gourley.

I.A.A.S. October Luncheon

The fourth October luncheon of the London and Home Counties Branch of the I.A.A.S. held last week at Grosvenor House had the best attendance ever. After-luncheon speakers were: Mr. Derek Walter Smith, M.P., Parliamentary Secretary to the B.o.T., who is an honorary member of the Association; Mrs. Bentwich, J.P., Chairman of the L.C.C.; Lt.-Col. A. E. Henson, T.D., President; Mr. F. J. Meekins, Vice-Chairman and Branch Chairman; and Sir Thomas Bennett, K.B.E.

Mr. Derek Walker Smith spoke of the useful work Association Members rendered as architects and expert witnesses. Mrs. Bentwich, who used to be chairman of the L.C.C. Education Committee, spoke proudly of the L.C.C. schools. We are "very lucky in what our architects are doing", she said. Lt.-Col. Henson said that the Association was better equipped to serve the profession than at any time in the past with its new headquarters, new journal and new by-laws. He thought that architects and surveyors had not impressed the public with the importance of their work and that "many of our new buildings today should reach a higher standard." Mr. Meekins pressed for a solution of the traffic problems in our towns. Sir Thomas Bennett referred to the trends in the commercial life today and warned architects and surveyors not to lose sight of the fact that they were the technical advisers of the county.

Announcements

Frank Rutter, F.R.I.B.A., has resigned from the partnership, Norman and Dawbarn, and is now practicing from 7 St. Martin's Avenue, Epsom, Surrey.

* * *

Graham Dawbarn, R. F. Lloyd Jones and Alick Low, partners in Norman and Dawbarn have taken into partnership Herbert Wilson, A.M.I.C.E., Walter H. Lindsay, A.R.I.B.A., A.M.T.P.I. and Greville Rhodes, F.R.I.B.A., all of whom had previously been Associates in the firm.

Law and Administration

Restrictive Trade Practices

Under the *Restrictive Trades Practices Act*, 1956, *many* trade agreements must be registered. The Act left it to the Board of Trade to decide in what order the registration of agreements should be required. In August the Board of Trade made the *Registration of Restrictive Trading Agreement Order*, 1956, which "called up" certain classes of agreements and required these to be registered within three months of November 30, 1956. Last week the Registrar of Restrictive Trading Agreements made the *Registration of Restrictive Trading Agreement Regulations*, 1956. These Regulations specify the documents which must be sent to the Registrar when registering an agreement. The documents required are, generally speaking, four copies of any document which constitutes the agreement or any part of it together with four copies of a memorandum describing any terms of or parties to the agreement not rehearsed in the main document. A form shortly to be issued must accompany these documents and this form will constitute a certificate that the documents sent to the Registrar set out *all* the terms and name all the parties to the agreement to be registered.

Shortly after agreements begin to be sent in to be registered it is intended to compile a register which will show certain details of most of the agreement submitted. Copies of this Register will be maintained in London, Edinburgh and Belfast and identical particulars will appear in each. Like the register of companies these books will be open to inspection for a fee, and likewise extracts and copies will be obtainable. The fees to be charged for these facilities are set out in the *Registration of Restrictive Trading Agreement (Fees) Regulations*, 1956, also made last week.

Viscount Montgomery presenting an L.M.B.A. bronze medal to R. J. Baldwin, of John Laing & Son Ltd. and Willesden Technical College, one of City and Guilds examination prizewinners

Building and the Weather

The Ministry of Works have recently reminded builders of the large amount of time lost on building work through adverse weather. The Ministry believe that reliable *local* weather forecasts may assist builders to plan their day to day operations more effectively. With these objects in mind they have issued an Advisory Leaflet *"Weather and the Builder"*. This leaflet describes the services available with particular emphasis on local and special facilities and suggests how the best use may be made of the information obtained. There is also an explanation of weather definitions and meteorological terms together with an explanatory map showing the meteorological offices and divisions into which Great Britain is divided.

Inaugural Address of the R.I.B.A. President

Part of Mr. Kenneth M. B. Cross' speech at the R.I.B.A. on 6 November, 1956

IT is, I believe, customary for this Inaugural Address to be a kind of speech from the throne in which no questions of policy need necessarily be referred to but in which it is hoped that there may be some disclosure as to the kind of man you have chosen to be the New President. My endeavour, of course, while chatting amiably of this and that will be to ensure that no such disclosure takes place.

When I had the honour of being elected President of the Royal Institute of British Architects many of my friends offered me their congratulations, some said how surprised they were when they heard the news—though they hastily added that they did not mean quite that. There were others who offered condolences as to one suddenly bereft of reason and who was hurrying to an untimely end. But one well-wisher, having offered congratulations, put the terrible question: "But when is your Inaugural Address? I must come and hear that." I know he had the best intentions but no one who has not experienced the labour of composing an Inaugural Address can have the slightest conception what a depressing effect this exercise can have on the most buoyant personality. At first glance it all seems so easy; the canvas is vast, architecture, civilization, humanity, progress are all impressive words and might be brought in to play their part in the composition of a picture of considerable dimensions. The story that the picture told would start with the cave dwellings of Dordogne in France 20,000 years before the Ice Age and would end with some cloud-capped pinnacle, one mile high, created in the imagination of Frank Lloyd Wright as a contribution to the solution of the housing problem on the Lake front at Chicago. But this review would, I fear, degenerate into an outline history of architecture which you would say at once you could get out of a book. I would, of course, protest that we were a learned society but you would say "Yes, we know, but not as learned as all that."

I wonder how many of my audience here tonight know how this Institute started about 122 years ago. In January 1834, a few architects met together at the Freemasons Tavern to form a society for the study of architecture and architectural topography. They could not agree on the objects to be aimed at nor the conditions of membership, so a few of them decided to hold another meeting at another hotel and a committee was appointed to draw up a scheme—we still do that in times of difficulty. This led to the election of such men as Barry, Basevi, Decimus Burton, Gwilt and Hardwick as original members. But at the end of 1834 the Institute of British Architects consisted of a Council and fifteen ordinary members and the first formal meeting of the Council took place at the Thatched House Tavern on December 10.

In addition to our central organization (today) there are 26 allied societies in England many of which have several branches or chapters. In Scotland there is the Royal Incorporation of Architects with six chapters and in Ireland there is the Royal Institute of Architects of Ireland in the Republic of Ireland and there is the Royal Society of Ulster Architects.

No doubt most of my audience here tonight are fully aware of the extent of our orginization in the British Isles with a membership, including students, of about 20,000, but I would remind you that we are also the centre of a network of Overseas Allied Societies and their branches with whom we are in frequent touch particularly in regard to educational and constitutional matters.

In Africa we have the Institute of South African Architects with its President-in-Chief and its provincial institutes in the Cape, Natal, Orange Free State and Transvaal, the East Africa Institute with three chapters in Kenya, Uganda and Tanganyika and also the Institute of Southern Rhodesian Architects. We are shortly to admit to alliance a society covering Northern Rhodesia and Nyasaland.

In Australia the Royal Australian Institute of Architects comprises chapters in New South Wales, Queensland, Tasmania and Western Australia together with the South Australian Institute and the Royal Victorian Institute.

The Royal Architectural Institute of Canada with its headquarters at Ottawa has federated societies in Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec and Saskatchewan.

The New Zealand Institute of Architects is allied to us and to complete the story we have the Indian Institute of Architects, the Institute of Architects of Malaya and the Federation of Malaya Society of Architects.

No doubt the time will soon come when we shall be receiving applications for alliance from the recently formed societies in West Africa, Hong Kong and the British West Indies.

I have referred to our allied societies overseas in some detail because I think it should be appreciated what a large field our activities cover and what a great influence we can exercise in all that concerns architectural matters through the exchange of thought and ideas with our friends in various parts of the Commonwealth. I suggest that we call to mind Dr. Johnson's recommendation and keep our friendships in repair in every way possible and particularly through the exchange of visits. I believe that they will welcome us; I know that we will welcome them whenever they can come and see us. It is no longer sufficient for us to be a small learned society with our interests largely confined to London as we were in the time of Lord de Grey our first President. Neither is it sufficient for us to have our activities confined to the British Isles as was the case at the beginning of this century. By working for and getting the Registration Acts of 1931 and 1938 we have taken a different road, one that leads to growth, consolidation and recognition at home and to expansion, breadth of view and freshness of vision under the stimulus of contact with our allied members overseas.

It has been said that the position of the Royal Institute of British Architects is unique, that not only have we a series of architectural organizations allied to and federated with the R.I.B.A. at home but that you cannot go into any part of the Commonwealth, into any Dominion or Crown colony without finding an organization of architects

R.I.B.A. President's Address

who are linked by practical as well as sentimental ties with the Royal Institute.

It is essential that we should devise machinery to ensure the fullest consultation with our allied societies wherever they may be situated in the Commonwealth. I hope it may be possible during my Presidency for me, in company with the Secretary, to visit some of them in response to the warm invitations which we have received. Plans towards this end are at present under consideration.

There are three phenomena in modern life which would seem to indicate that great changes are taking place and that we are approaching a new era in human affairs. They are the spread of automation, the discovery and use of atomic energy and the achievement of self-government by many people formerly of colonial status. The increase in automation and the use of atomic energy are bound to affect building and we can expect additional new materials, new methods of construction and a general speeding up of building processes. But science cannot do everything; science cannot supply the complete answer. Here is a small extract from Lord Crawford's address to the University of St. Andrews in 1953:

"There is, after all, so much that science cannot do. It cannot tell what song the Syrens sang nor what we are beyond the grave. It has brought us longer life without the happiness which makes it worth living, and without knowledge of its cause or meaning, it does not know why we are moved by music, nor why words in a certain order become poetry, nor why one bottle of wine is better than another. . . . It has accordingly nothing to say about things religious, aesthetic and philosophical."

Science cannot supply the complete answer but paradoxically, science offers indirectly the only hope of real architectural progress. If architects are to design happily and successfully they must feel that they have the support and appreciation of the public for whom they work. In short, not only architects but the public should be cultivated and knowledgeable. In the stress and struggle to keep going, it is increasingly difficult for younger men and women to earn their living, run their homes, get their children educated and continue to find sufficient spare time in which to develop their tastes in the arts in general and architecture in particular. Not only is more leisure needed but also money for the purchase of books, pictures or other works of art. We must look to science to improve methods of production to such an extent that shorter hours can be worked and, in addition, we should call for the development of domestic labour-saving devices at low cost to alleviate the soul-destroying tyranny of housework. It might be possible to develop a social economy on these lines in which people can live a full life and enjoy a real appreciation of the arts.

It is, I think, significant that at the meeting of the British Association in September, a strong appeal was made for a new degree course at universities. It was proposed that a science and an arts subject should be combined in one course with a view to producing men and women for whom there were not two words but one. Mr. J. A. Ratcliffe, F.R.S., of the Cavendish Laboratory, Cambridge, argued that science was impersonal, it started from agreed facts and its conclusions were checked by experiments. But there were situations in which the element of judgment was important and powers of expression and persuasion were needed. Dr. Smail, the historian, complained of the ignorance of the generally educated man as to the meaning of the simplest scientific terms. Recently both scientists and historians have been recognizing the value of each other's methods and if effective means can be found of reducing the barriers that have grown up since the days of Sir Christopher Wren and Sir Isaac Newton, between science and art, then surely we shall have taken a step in the right direction.

There may be some here tonight who are not entirely happy about the position of the architect and the various engineering specialists whether structural, heating, lighting, acoustic, ventilating or others. Owing to the growing complexity of modern building methods it is virtually impossible for the individual architect to be an expert in these engineering matters. But that does not mean that he should stand aside and leave the experts in charge. It is of the greatest importance that the architect should be in active control of all work included in the building contract and accordingly he must be familiar with the broad principles involved in each case so that he can explain his requirements to the engineer and be in a position to discuss the problem with him and to criticize the detailed solution which the engineer submits.

In Parliament

Building and Loan Costs

Mr. Arthur Lewis asked the Minister to state the cost of building a three-bedroom council house in 1951 to 1956, respectively; and the cost to the local authority in borrowing from the Public Works Loan Board. Mr. Sandys gave him the following information on October 31:

First quarter in each year	Average cost of tender approved	Interest and Repayment charges on average costs
1951	£1,304	£46 19s 11d
1952	£1,380	£63 15s 5d
1953	£1,385	£64 0s 0d
1954	£1,378	£60 15s 5d
1955	£1,402	£61 6s 7d
1956	£1,448	£82 16s 10d

Council House Tenders

Mr. Llewellyn, asked the Minister to explain how the ceiling price for council house tenders is arrived at. Mr. Sandys told him that it was designed to ensure that local authorities did not pay more than a fair price for the houses they built. It was derived from a critical examination of actual prices submitted by local authorities, and was kept under review. In considering tender prices, account was taken of any abnormal factors affecting the cost of a scheme (Oct. 31).

Housing Subsidy Ended

The Minister of Housing and Local Government has announced the ending of the housing subsidy—with one exception. There were questions from Conservative M.P.s to the Chancellor of the Exchequer asking for special attention to the housing needs of the elderly, and these Mr. Sandys asked to wait for the statement he proposed to make. When it came, he recalled the Government's decision in October last year that the general housing subsidy should be abolished, but that to ease the transition a reduced subsidy would be paid for a year or so. Then he went on: We have recently reviewed the position and have decided that the time has now come to bring this interim arrangement to an end. Accordingly, I have

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Think or Thwim at the A.A.

Points from the Inaugural address of the President, MR. GONTRAN GOULDEN, on 31 October, 1956

The Architect as Leader

THE profession of architect is *not* very highly esteemed by the general public, still less by the world of industry and commerce. For this, architects themselves are very largely to blame. In dress, language, friends, habits and even in handwriting they are marked as beings apart, making few concessions to the usually stuffy conventions of other professional or business people. Bowler hats are not common in the cloakrooms of the A.A.

This lack of esteem is of graver importance than is usually supposed, it is becoming more so every day. If architects do not quickly learn to talk to the rest of mankind in a language that can be understood (preferably by a child of four) they are doomed, and I will tell you why.

It is often, but inaccurately stated that the profession is made up of two types, good architects and successful architects. Luckily this is becoming less true every day but it is still sufficiently true to point a moral. The good designer glued to his drawing board, sharpening his pencil rather than his wits lives too often in a world of unreality, he fears and shuns the outer world. The successful architect meets the world on its own ground, talks its language, eats its business lunches and has even been known to play bridge and golf. His manner is acceptable and comprehensible to big business, he inspires confidence, he is in no way odd. And so the City of London is rebuilt.

It has for some time been fashionable to talk of the building team. This manifestation of progress in the industry has taken the limelight for pre-planning although it in turn is being ousted by the consideration of Elemental Bills of Quantities. It has been very loudly claimed that the architect should be the leader of the Building Team. In principle this is no doubt right because by his training, his education and his background he should be the person most suitable to lead. But whatever his artistic qualifications, whatever his technical ability he cannot lead the team unless he is a trained leader. Architects can have no right to lead the building team, they must be trained to do so, but I doubt whether the word leadership has ever been heard in the procrustean deliberations of the Board of Architectural Education.

Unless some form of training in leadership is given to young architects the battle for good architecture will never be won, instead it may very soon be lost. Success and promotion in industry go to those who can exercise leadership. Make no mistake, only architects think that the architect should head the building team, engineers, quantity surveyors and builders have their own views. The building rough-house is no place for the lily-livered. I am not suggesting that you should all wear bowler hats —although they would, I am sure, suit some of you admirably—the men of course. Nor am I asking you to become architectural Liberaces. I am suggesting, however, that you should get around more in the world and take a greater part in ordinary day to day public life.

Architecture used to be *a gentlemanly art*, now it is *hard business*. A few lucky people continue to practice in the old manner but it cannot go on much longer. The private client is gradually disappearing, the hydra-headed state or business client will be all that is left.

I hesitate to suggest that an effort should be made to cram anything more into the students' five already overtaxed years but it seems to me that some training in leadership is vital for the young architect if he is ever to attain the position in the building team which is properly his.

In the long run architectural education may be expected to cope with leadership training. It will necessarily be in the long run. However, something at least could be done at once. Aptitude for leadership could and should be taken into consideration when applicants for places in schools are interviewed. Educational and artistic qualifications are not enough.

Competition for the best brains coming from our public and grammar schools is intense and becoming more so. The prospects in industry are well understood by careers masters and are attractive to boys. Knowledge of the prospects in architecture and the work of an architect, on the other hand, appear to be little known with the result that it is rarely that any but the arty boys take an interest in architecture. Headmasters, particularly in boarding schools seem to me to live in blinkers, I would like to see them do a course of real life every five years.

What can be done for the qualified architect interested in leadership and in learning the ways and language of the wicked world of commerce? I suggest a staff college where courses not only in leadership, but in business subjects would be taught. Such a staff college should include all branches of the building industry and should be an independent organization financed from the profession and the industry but with the blessing—more or less munificent —of the Ministry of Education.

I do not suggest that the school of building management which has been so long discussed should be a part of the staff college. I am convinced that the place for the leading school of this kind is here and I am extremely sorry so far no suitable formula has been discovered for its foundation.

On Professional and Official Bodies

The President of the Royal Academy can fairly be described as an official body. As head art man of the nation he gets the Press. He is in his own specialized field a most distinguished architect. It is therefore, in my opinion, a very great pity indeed that during his two years in office he has continuously and violently attacked modern architecture and by implication modern architects regardless of their actual merit and merely for being modern. I do not mind admitting that I have a very soft spot for Sir Albert but I think he is entirely wrong headed in his policy.

The Royal Institute of British Architects can directly influence good architecture by improving examination standards and by constant watchfulness on organizations and individuals seeking to do themselves good at the expense of architecture. It can further exercise leadership by bringing the work of the architect increasingly to the notice of the public.

The Architectural Association is for reasons that I have already given, one of the most powerful forces on the side

A.A. President's Address

of good architecture. For many years the leader in architectural education it is contantly considering new ideas and exerting pressure on those who would resist them. The vitality and bounce of the A.A. has made it, I am glad to say, through successive principals—and never more so than through the present incumbent—the 'enfant terrible' of the Board of Architectural Education.

The Royal Fine Art Commission seems to me a purely negative leader. It is so balanced in its membership that anything like a well defined decision is a practical impossibility. Its terms of reference and its solely advisory capacity make it a toothless organization unable to exercise initiative. There is a growing and dangerous tendency for it to become an issuing office for architects of respectability for second rate building projects.

The Council of Industrial Design is to my mind an admirable body, its one weakness being that it is officially sponsored—though how else it could be financed I do not know—this sponsorship makes a large section of industry suspicious of it.

British Railways since nationalization have had a pitiful design record. This is the more lamentable when one remembers the great design traditions of the original railway companies. In fairness it must be said that the trouble was started when the railways were grouped between the wars.

Finale

To sum them up : First : In selecting our students more weight should be given to their suitablity as future leaders.

Second : We must raise our standard of professional training. This is not just a question of architectural design or structural development but must be related to the way in which the building industry, industry as a whole and commerce is developing.

Third : We need a system for keeping architects up to date throughout their professional careers. The armed services do this by means of schools of instruction where students attend courses. I have suggested therefore that there should be a staff college for the building industry. This would be a purely post-graduate organization and should not be confused with the School of Building Management which I would like to see established here. Both however would be concerned with the production of leaders.

The adoption of these three points would I consider help to make the profession better suited to take its proper place at the head of the building team.

Fourth : Large organizations whether public or industrial must have a design policy. Probably the best though not the simplest way of establishing and controlling such a policy, is through a design committee. It is essential that the chairman of such a committee should be a leader with a seat on the executive and a strong enough personality to pilot—or push—his committee's recommendations through the board.

An alternative is to have an equally strong member of the board who is made responsible for dealing direct with a professional organization or organizations on all questions of design. This is simpler but requires an even stronger personality as he will have no committee to back him.

Fifth : I believe that the architect has more to give the world than architecture. His training and experience if supported by the qualities of a leader should make him a most valuable citizen if only he would go out into the world.

In Parliament

continued from page 614

today laid a draft Order to abolish the remainder of the general needs subsidy for future houses and flats. I have, however, decided to make an exception on one-bedroomed dwellings, the subsidy for which will be maintained at the present level. In doing so, I have particularly in mind the needs of elderly people, and the desirability of facilitating movement from under-occupied houses. The existing subsidies for slum clearances, overspill, expensive sites and other special purposes will remain unchanged.

The Opposition spokesman, Mr. Mitchison, declared that this would speed the sharp fall in Council building, which was now over 50,000 houses a year fewer than it was a couple of years ago. Mr. Sandys told him that, from the returns so far received, the total number of houses built this year would once again, as near as did not matter, be 300,000 (Nov. 1).

Coming Events

The Royal Institution of Chartered Surveyors

November 12 at 5.45 p.m. Ordinary General Meeting. The President, W. E. A. Bull, F.R.I.C.S., F.A.I., will deliver his Presidential Address. At 12 Great George Street, S.W.1. Immediately prior to the meeting, the President, on behalf of members, will lay a wreath at the Institution War Memorials.

Leeds School of Architecture and Town Planning

November 13 at 7 p.m. Professor Sir Albert Richardson, P.R.A., F.R.I.B.A., Leeds City Art Gallery. At 43A Woodhouse Lane, Leeds, 2.

The Institution of Structural Engineers

November 13 at 7 p.m. Scottish Branch. "Tubular Structures", by R. G. Taylor, at the Institution of Engineers and Shipbuilders, Glasgow. Joint meeting with the West of Scotland Branch of the Institute of Welding.

The Building Centre

November 14 at 12.45 p.m. Lunchtime Film Show. "Bright New World", "Living With Formica", by Thos. De La Rue & Co. Ltd., at 26 Store Street, W.C.1.

Cement and Concrete Association

November 14 at 6 p.m. "The Manufacture of Hollow Reinforced Concrete Beams", by W. K. Roberts, to the Reinforced Concrete Association, at 11 Upper Belgrave Street, S.W.1.

Royal Society of Arts

November 14 at 2.30 p.m. "The Commissioning of Works of Art", by Louis Osman, B.A.(Arch.), F.R.I.B.A., at John Adam Street, Adelphi, W.C.2.

Victoria and Albert Museum

November 14 at 6.15 p.m. "St. Paul's Cathedral", by John Summerson, Curator of Sir John Soane's Museum. At South Kensington, S.W.7.

Institute of Landscape Architects

November 15 at 6.15 p.m. "Problems of the Landscape Contractor", by Harold Gilliam, at The Housing Centre, 13 Suffolk Street, S.W.1 (Members only).

The Royal Institution of Chartered Surveyors

November 15 at 5.45 p.m. Address on "Building Construction and Fire Protection", by G. Langdon Thomas, A.R.I.B.A., at 12 Great George Street, S.W.1.

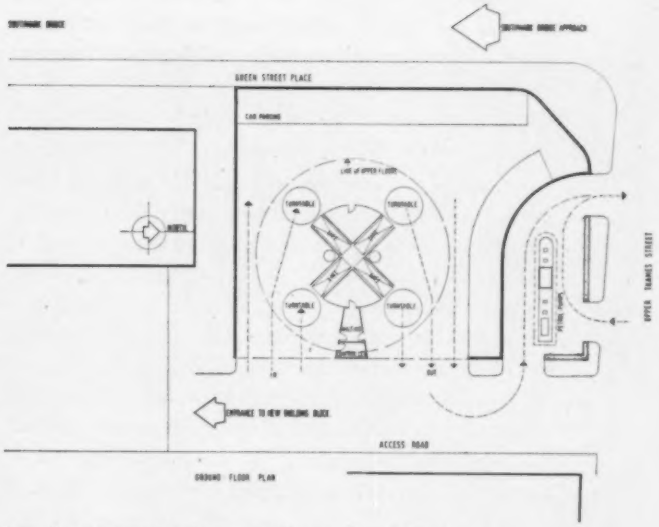
Perspective

The Rotapark System

WHEN details of this push-button car parking machine were released last week Mr. Rosser Chinn, managing director of Lex Garages Ltd. who are backing the project, said he realized the Rotapark alone is not a complete answer to the problem of London's parked-car-congested streets but that if combined with new parking regulations the system could go far towards providing a possible solution.

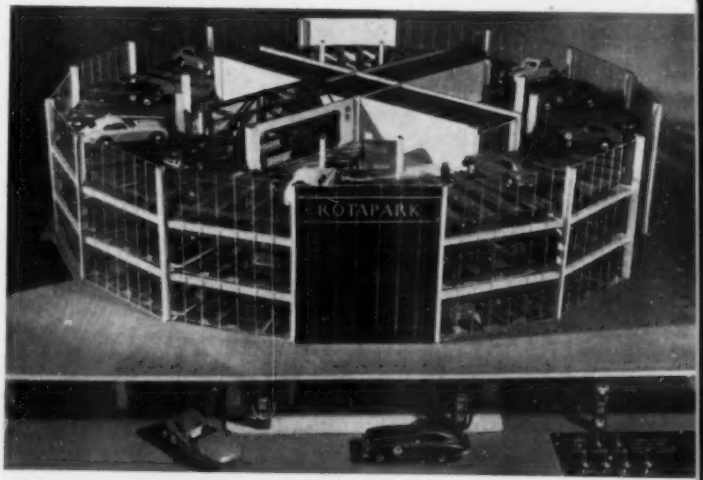
He pointed out that on any normal week day there are some 350 cars parked along Piccadilly from the Circus to Hyde Park Corner and that one rotapark—of the 10 storey type now being considered by the L.C.C. Planning Committee for the Corporations Court of Common Council—could accommodate 320 vehicles. Mr. Chinn emphasized that the system is a wholly British invention by Griggs & Sons Ltd. and that, although no similar structures have as yet been erected either here or overseas many of the components are standard and the invention itself is simple both to operate and to construct.

The crux of the scheme is an 80ft dia revolving drum accommodating 32 cars which is fed by a fully automatic dolly which draws vehicles into the lifts for transmission to upper floors. One such park can be built on a site 100ft square.



Plan for proposed scheme at Queen Street Place

Picture of model



The Rotapark System

The cost of a Rotapark is estimated in the region of £500 per car space. First proposals for parks—at Shoreditch and Aldersgate—are at present under review by the L.C.C. and it has been specified that, regardless of size, the garages should be able to be completely emptied within an hour.

To meet this requirement and still maintain operating efficiency, the designers have made allowance for the number of electrically operated lifts to be increased or reduced accordingly. For a ten floor structure, four lifts are considered the optimum—possibly three or less for a lower building and more as the number of levels is increased.

The time cycle from collection of the car to parking has been worked out at 53 seconds.

Operation

A universal dolly has been invented to cope with any size car and the system used to draw the vehicle into the lift relies on two horizontal fingers sliding forward, under the car, and pressing themselves against the car tyres. The width at which these fingers operate are automatically set by the type of car to be handled.

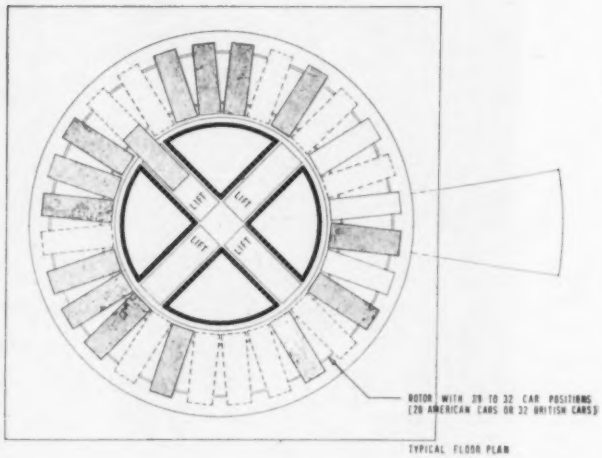
Actual parking of car is as follows: It is driven on to a reservoir turntable, left locked and with brakes off. The turntable turns automatically and faces it into line with the parking dolly in the lift, a unit which is an integral part of the lift itself. The attendant hands the driver a ticket (colour indicating the lift and quadrant served by it; a numeral shows the floor it is to be parked on; and a letter from A to H indicates the parking stall it is to occupy on the parking rotor). A duplicate ticket is retained by the attendant for handing in to the office later. Tickets are time stamped when cars are parked or deparked.

For parking, a lettered and numbered button, indicating the floor and the stall which the car is to occupy, is pushed by the attendant; and then a second button covering the actual parking operation is pushed.

The first button immediately starts the parking rotor on the floor indicated to turn the desired stall into position at the proper lift shaft; the second button sends the parking dolly out from the lift and under the car and takes it on to the lift, rises to the proper floor, sends the dolly out with the car, which it deposits on the U-shaped channels of the parking stall and returns to the lift.

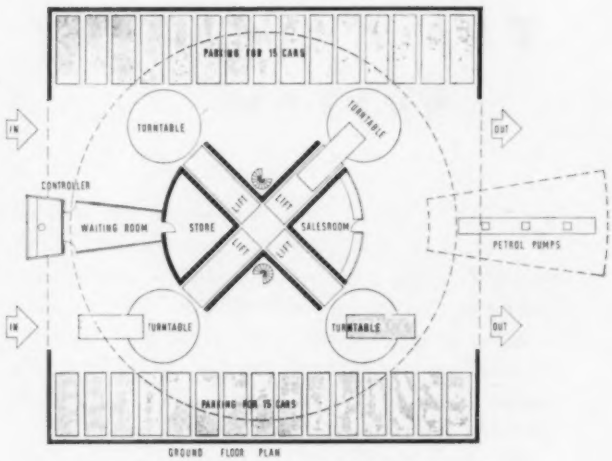
Architects are Orman and Partners in association with Shingler and Risden.

UPPER FLOOR



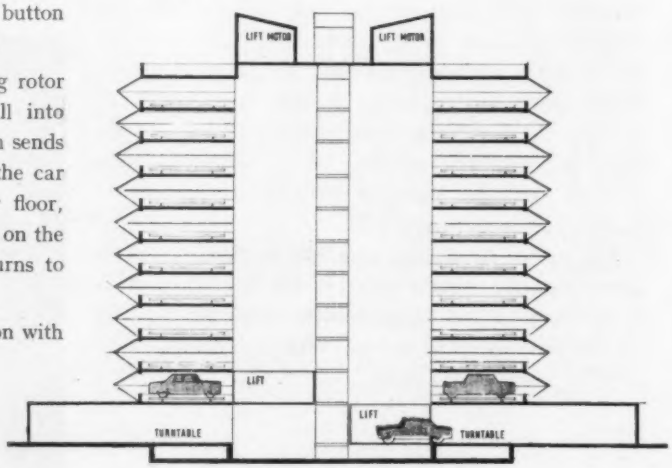
TYPICAL FLOOR PLAN

GROUND FLOOR



GROUND FLOOR PLAN

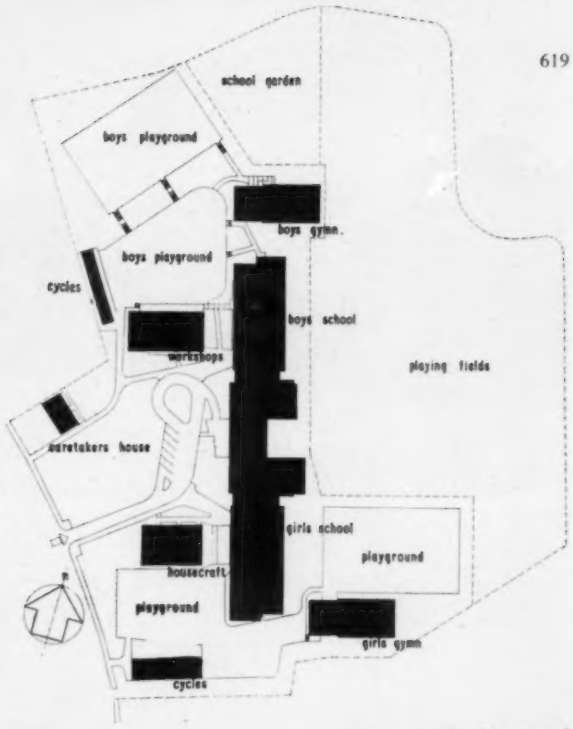
SECTION



QUARLES COUNTY SECONDARY SCHOOLS

ESSEX

architects :
YORKE, ROSENBERG & MARDALL



Looking north

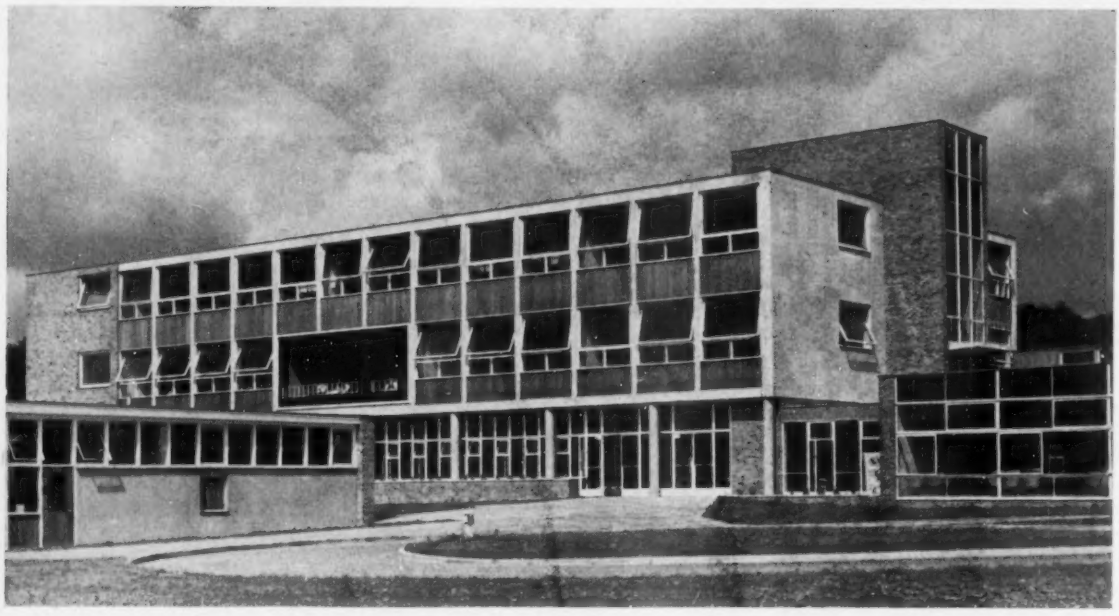
THE Quarles County Secondary Schools, Essex, consist of two separate 3-form entry schools, sharing a kitchen and boilerhouse. This was an obvious solution as the two schools, one for boys and one for girls, were to be built on the same site.

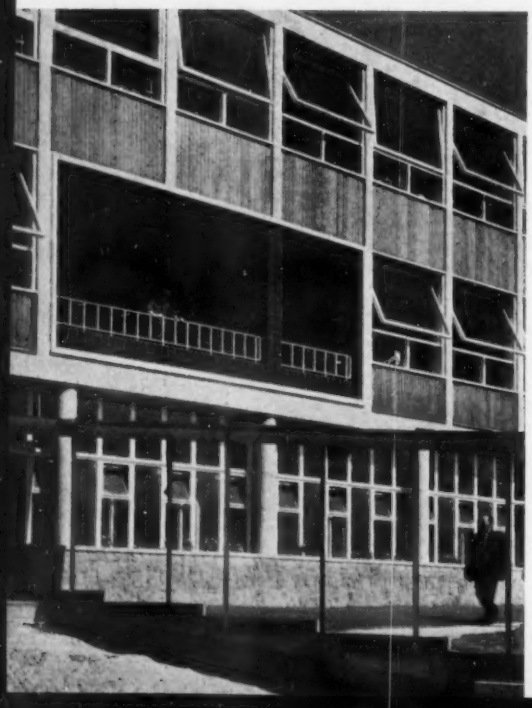
It was considered that an east-west aspect was desirable for the two double-banked classroom blocks of similar size. This has resulted in a duality rather than symmetry which is not altogether a happy result of an obvious and logical plan solution.

The area per place is about 68.5 square feet, the circulation about 8 per cent of the total area, and the main economy was effected by grouping four classrooms and special rooms round a staircase and connecting two such units to obtain a means of escape.

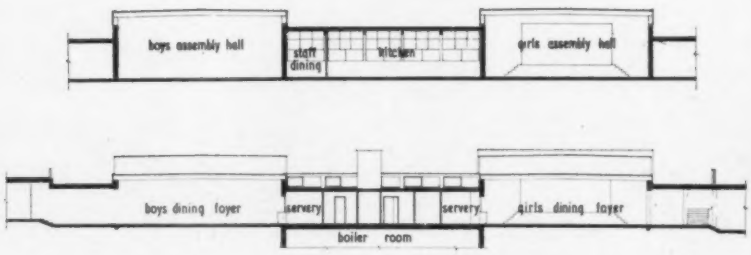
There are several different methods of construction used, according to which suited the purpose best. A second reason being that shortages of any one material would not bring the whole job to a standstill. The classroom blocks have two load bearing spine walls in brick, with hollow tile floors spanning to the outer wall faces, which consists of R.C. columns at

continued on page 623



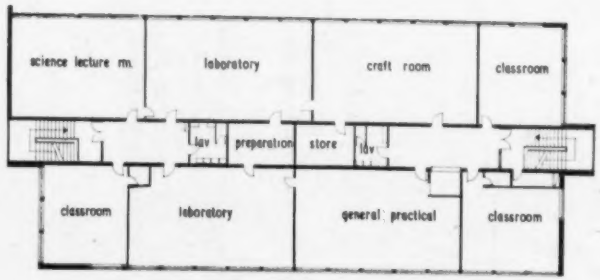


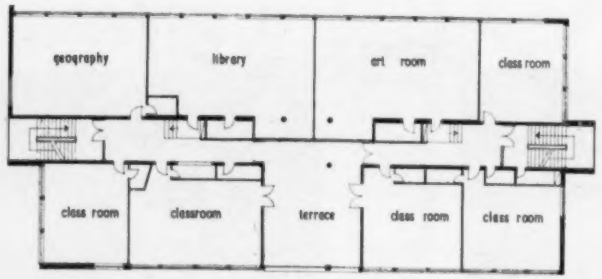
Top, looking across playground towards girls school, on left is gymnasium and, below, boys school with workshop block on left



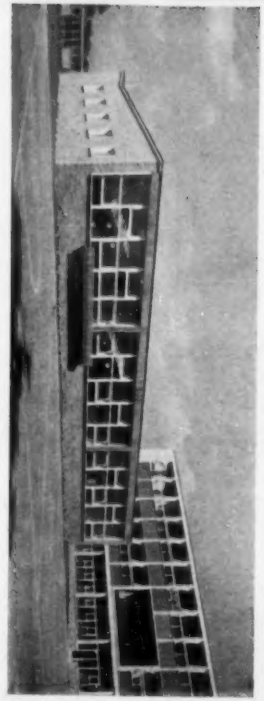
SECTIONS. SCALE: 1 IN = 40 FT

Quarles County Secondary Schools

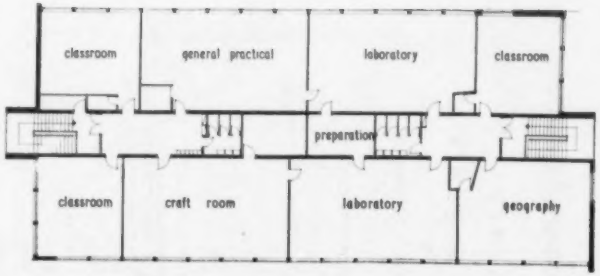


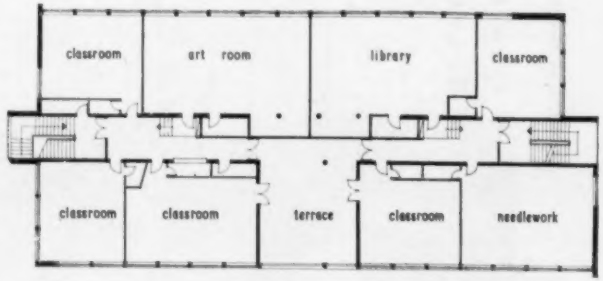


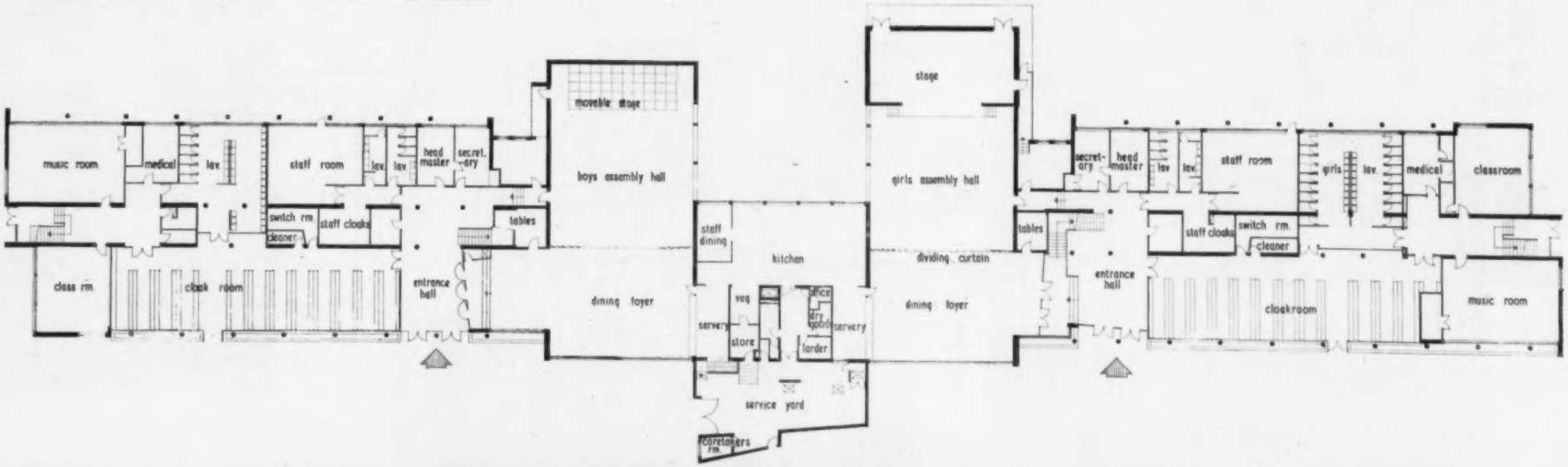
Housecraft block, girls' school



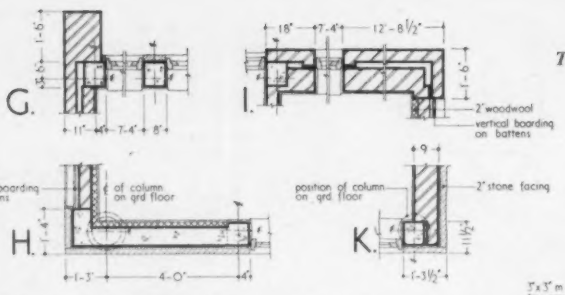
GROUND, FIRST AND SECOND FLOOR PLANS OF COMBINED BOYS AND GIRLS SCHOOLS.
SCALE: 1 IN = 40 FT



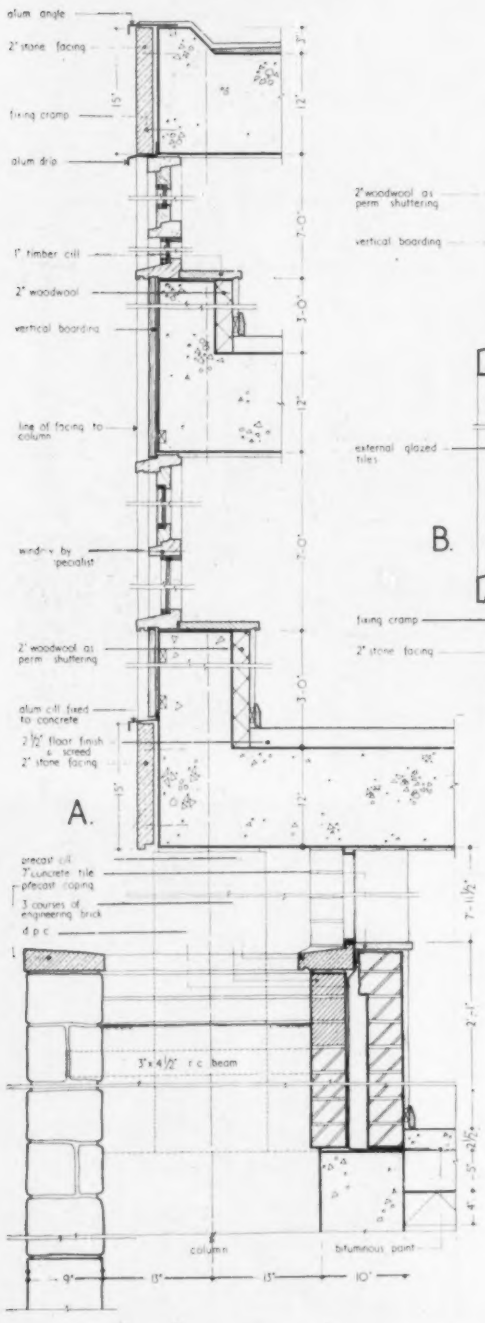


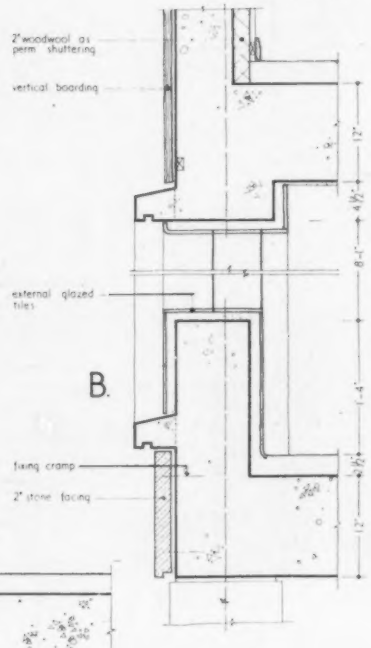


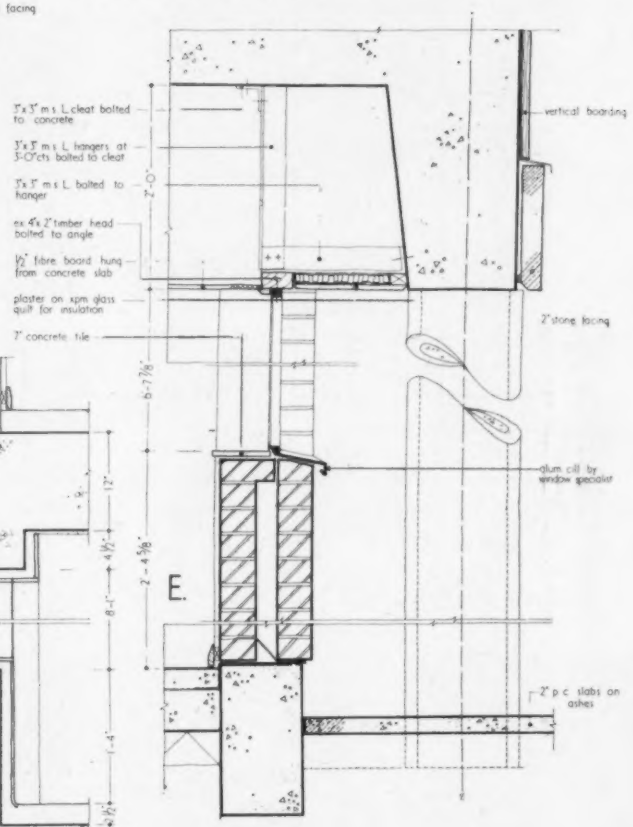
Quarles County Secondary Schools

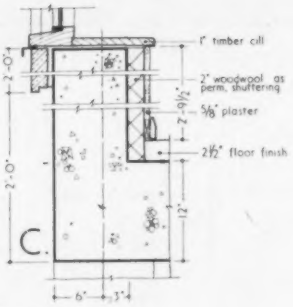


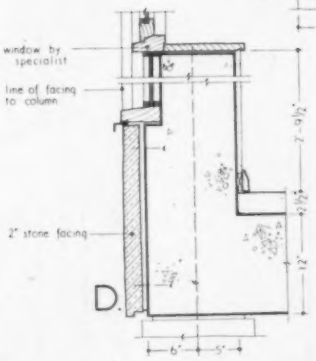
STRUCTURAL DETAILS RELATING TO KEY BELOW. 1/20F.S.

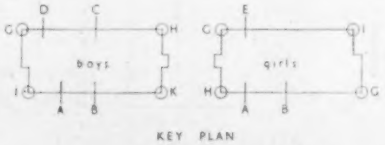





3"x3" m.s. L. cleat bolted to concrete
3"x3" m.s. L. hangers at 3'-0"cts bolted to cleat
3"x3" m.s. L. bolted to hanger
ex 4"x 2" timber head bolted to angle
½" fibre board hung from concrete slab
plaster on xpm glass quilt for insulation
2" concrete tile
vertical boarding
2" stone facing
alum cill by window specialist
2" p.c. slabs on ashes
E.







KEY PLAN

Associate-in-Charge:
I. B. Wilson

Supervising Architect:
H. J. Gordon

Services Consultants:
J. Stinton Jones & Partners

Structural Engineers:
Clarke, Nicholls & Marcel

Continued from page 619

8ft centres. These spans are at times increased to 16ft with edge beams. The assembly hall roof consists of curved plywood trusses at about 6ft centres spanning 40ft, supported on load bearing brick walls. The principle of construction is that of the "punt roof", but in this instance a 4ft plywood sheet bent to a semicircular shape, with the curve downwards with compressive and tensile members provides the structural strength. A ½in sheet of plywood forms a flat deck between the trusses.

The gymnasium blocks are in standard steel construction with precast concrete facing slabs and brick end walls. The housecraft block is constructed with load bearing brick cross walls and built up timber purlins at 2ft centres, supporting a Stramit slab. The larger spans in the workshop block necessitated steel trusses with timber joists, again on load bearing cross walls.

Externally the classroom block is faced with 2in thick Portland stone held by bronze cramps, with Western Red Cedar infilling panels under windows. London stock brick is used externally on most of the buildings.

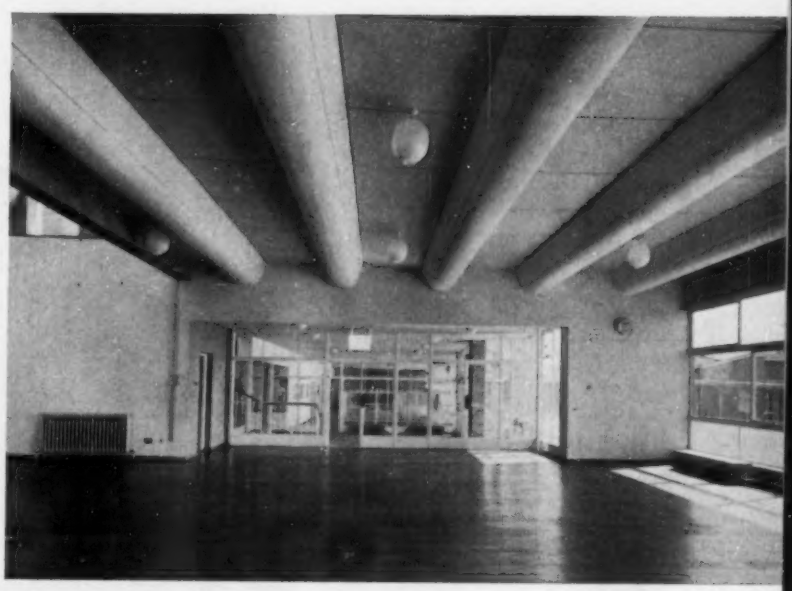
The net cost per place amounted to £211 14s 8d.

general contractors:

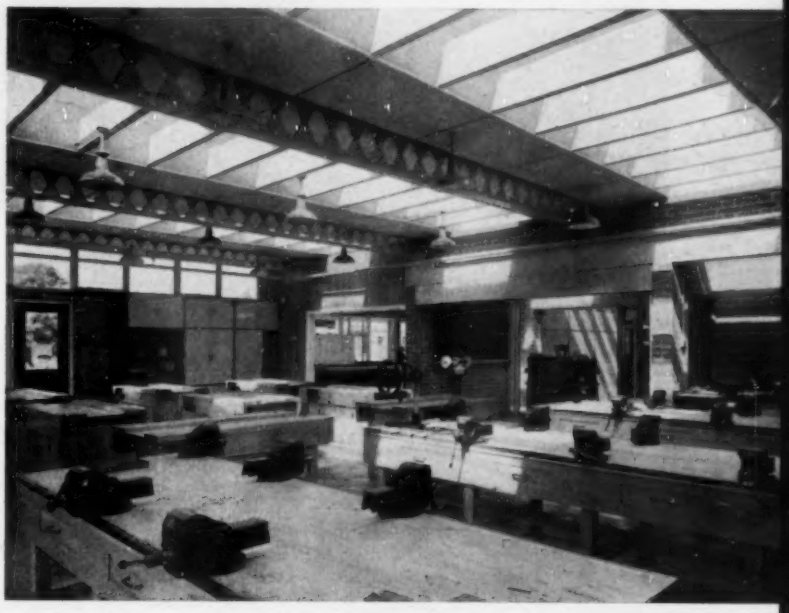
GRIGGS & SON LTD

sub-contractors:

Accotile: Neuchatel Asphalte Co. Ltd. *Blinds:* Tidmarsh & Sons Ltd. *Bricks:* Eastwoods Ltd.; The Uxbridge Flint Brick Co. Ltd. *Cat Ladders:* Clark Hunt & Co. Ltd. *Ceilings (Suspended):* Sundeala Board Co. Ltd. *Cloak Room Fittings:* James Gibbons & Sons Ltd. *Curtain Tracks:* Tidmarsh & Sons Ltd. *Cycle Shed:* Clark Hunt & Co. Ltd. *Doors:* Walter Lawrence & Son Ltd. *Door Tracks (Sliding):* Lockerby & Wilkinson (Birmingham) Ltd. *Escape Stairs:* Clark Hunt & Co. Ltd. *Fencing:* Light Steelwork (1925) Ltd. *Flooring (Strip & Block):* Hollis Bros. Ltd. *Gates:* Light Steelwork (1925) Ltd. *Hand Rails & Balustrades:* Clark Hunt & Co. Ltd. *Ironmongery:* Lockerby & Wilkinson (Birmingham) Ltd. *Joinery:* Sotos Ltd. *Metal Drips & Covered Way:* Wm. Briggs & Sons Ltd. *Partitions (Holoplast):* Compactom Ltd. *Paving:* (*Non-slip tile*) Carter & Co. (London) Ltd.; (*Terrazzo*) The Arcanum Terrazzo & Stone Co. Ltd.; (*Concrete Tile*) Jaconello Ltd.; ("*Hornton*" *Stone*) London & Sussex Merchants. *Plaster (Meta Mica Spray):* J. H. Jenner & Co. Ltd. *Roof Construction (Assembly Hall):* Veneercraft Ltd. *Roofing:* (*Felt*) The Neuchatel Asphalte Co. Ltd. *Roof & Sky Lights:* J. A. King & Co. Ltd. *Sanitary Fittings:* Stitson Sanitary Fittings Ltd. *Shutters (Roller):* Tidmarsh & Sons Ltd. *Sign Writing:* The Lettering Centre. *Slabs (Concrete):* Hills (West Bromwich) Ltd. *Soffits (Expanded Metal):* Expanded Metal Co. Ltd. *Steel Framing:* Hills (West Bromwich) Ltd. *Stone Facing:* Bath & Portland Stone Firms Ltd. *Tanking:* Neuchatel Asphalte Co. Ltd. *Terrazzo—Precast:* The Arcanum Terrazzo & Stone Co. Ltd. *Tiling (Glazed Wall):* Carter & Co. (London) Ltd. *Wall Linings:* The Arcanum Terrazzo & Stone Co. Ltd. *Windows:* (*Metal*) Aygee Ltd.; (*Timber*) Tomo Trading Co. Ltd.

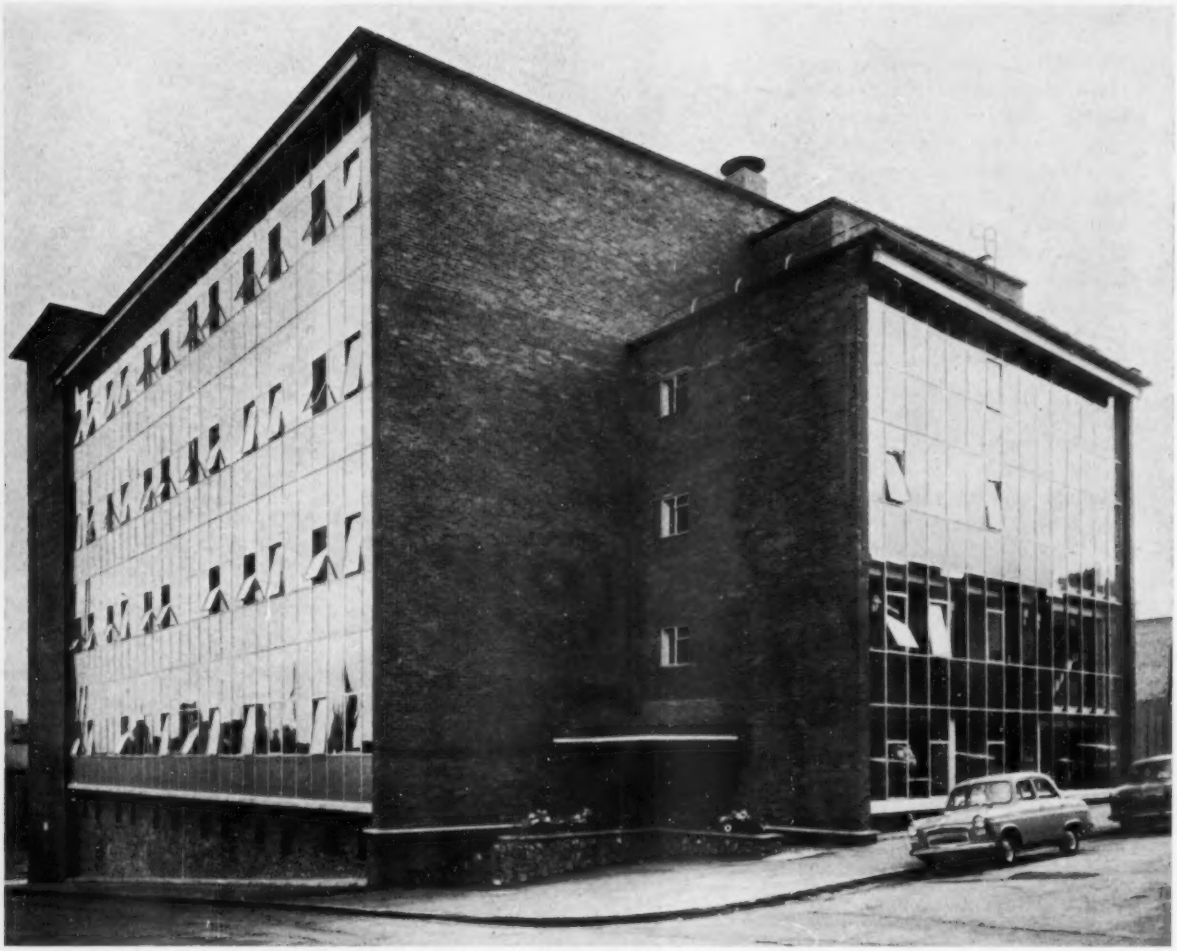


Looking towards entrance hall, across dining foyer in the girls' school. The assembly hall, on left of cut, is two storey



Interior of workshop

One of the teaching rooms



FURNITURE FACTORY

BIRMINGHAM

architects : J. SEYMOUR HARRIS AND PARTNERS

MESSRS. Rowland Hartrick Ltd. are manufacturers of bedding and furniture. Their new multi-storey factory brings what were formally scattered and separate departments together into one unit with common stores and offices.

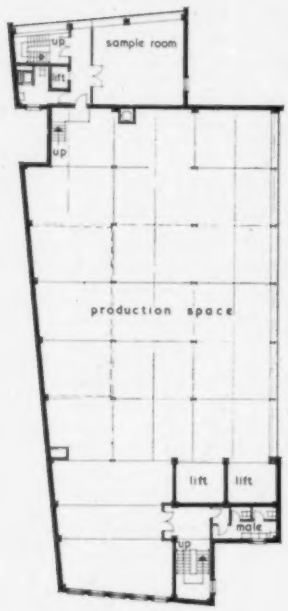
The site chosen is in the City of Birmingham Bath Row Redevelopment Area (old and war-damaged properties being developed by the Corporation) and is close to the City Centre. There is a fall of approximately 15ft along the length of the site, and there are frontages on to Blucher Street, Upper Gough Street and on to a service road. The total cost was approximately £100,000.

The client's requirements have been resolved into three groups; production areas, offices, and ancillary accommodation. The production areas are rectangular in shape, except where a light well has been formed at third-floor level and are sited at basement, ground, first, second and third floor levels. All production areas are centrally disposed on the site, thus leaving space for offices along the north side and for ancillary accommodation along the south side. Separate entrances for administrative and production staff are provided along the north and south sides of site respectively.

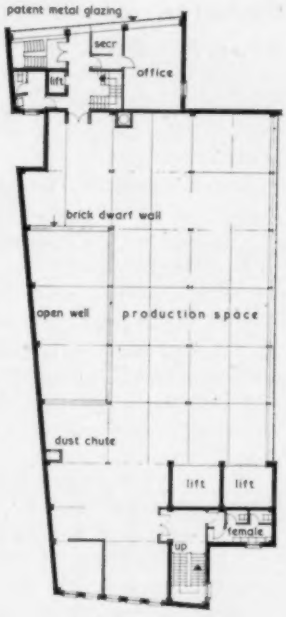
A loading deck having direct access to the service road with a clear headroom of 20ft was essential and the excessive cross fall on the site, readily provided for this at basement level.

A three ton goods lift, at one end of the production

continued on page 626



FIRST



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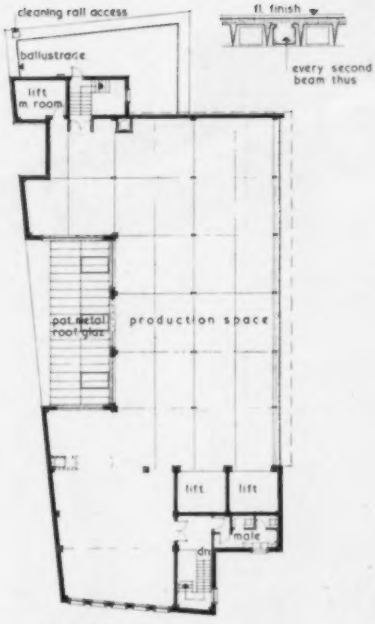
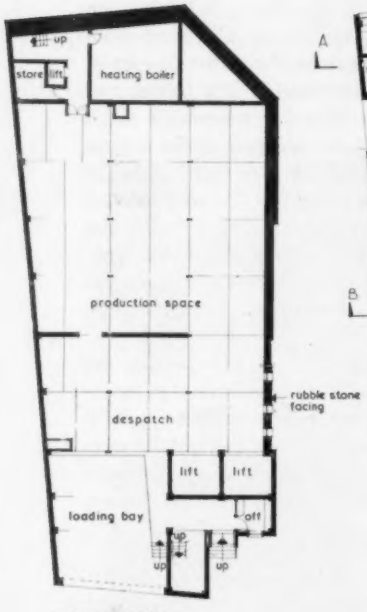
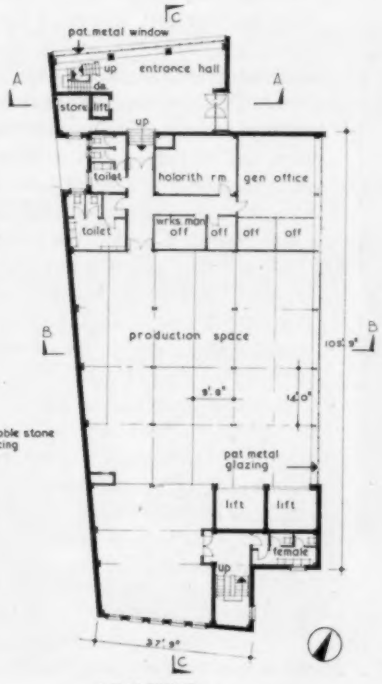


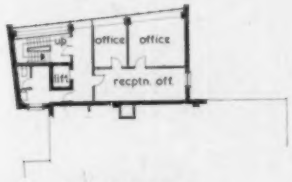
THIRD



BASEMENT



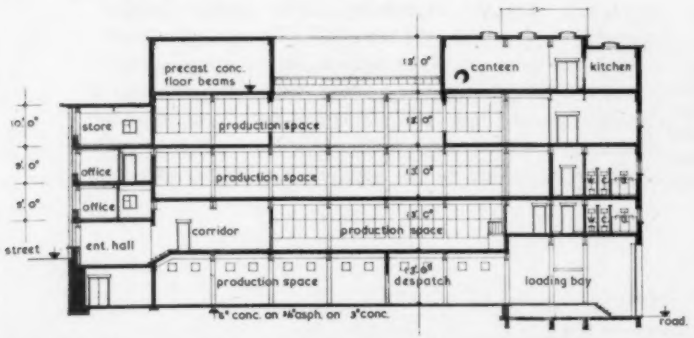
GROUND



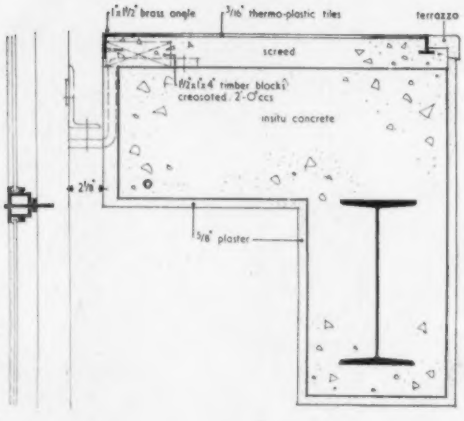
MEZZANINE

PLAN SCALE: 1 IN. = 16FT.

LONG SECTION



Furniture Factory
Birmingham



Left is detail of glazing fixing at staircase landing level which is seen through glass of picture above

area, transports timber to the mill on the top floor and frames and materials to various departments during manufacture.

Since a substantial area of the basement had to be devoted to the storage of finished suites of furniture, it was decided that timber milling could not, as is customary, be carried out at basement level. The whole production system is therefore based upon a downward flow from the timber mill and frame assembly on the third floor to the despatch of finished goods at basement level. The second floor is for material cutting and sewing cushion covering, and on the first floor is the upholstering and material store. Bedding and general office are on the ground floor.

Heating Installation

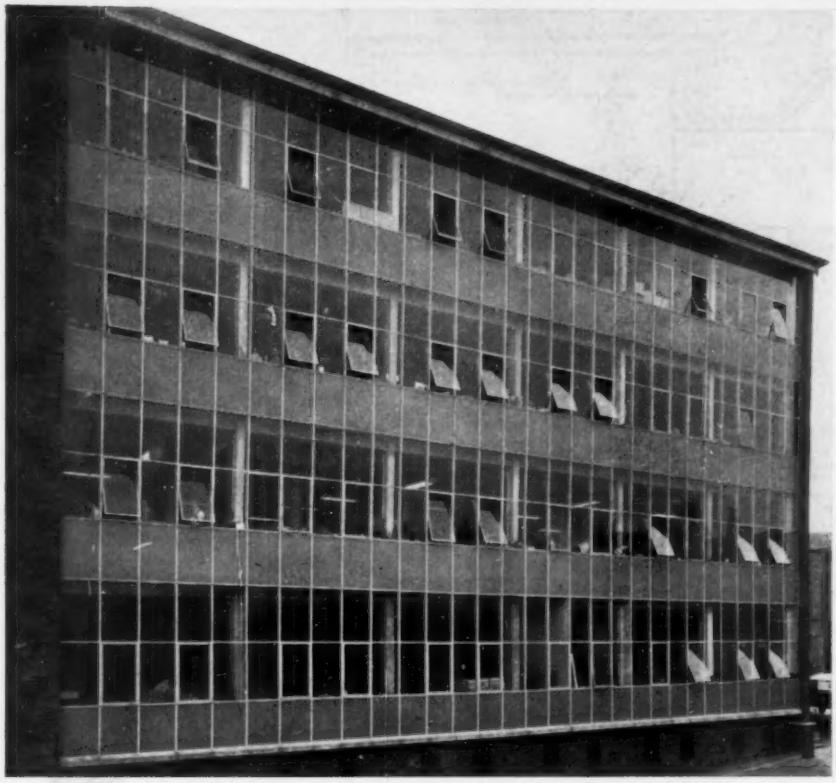
The heating of the building is by low pressure hot water from an oil fired boiler. The basement storage area is heated by overhead tubes and the remainder of the factory, except for the entrance hall in the office block, is heated by standard wall vectairs combined with parallel gilled tubes running horizontally along the complete length of the curtain wall approximately 9in above the floor level. The gilled tubes are insulated from the curtain walling by 2in wood wool slabs which are fitted into removable timber frames to facilitate renewal of Muroglass panels. The frames and tubes are enclosed by a continuous removable metal grill. Casings to the gilled tubes are open at the bottom to allow a free intake of cold air. A metal deflector is also provided behind the outer metal casing in such a manner that the air intake is deflected across the gills thus accelerating the air circulation and also insulating the outer casing itself. The resultant hot air passes through the outlet vents of the casing at high level.

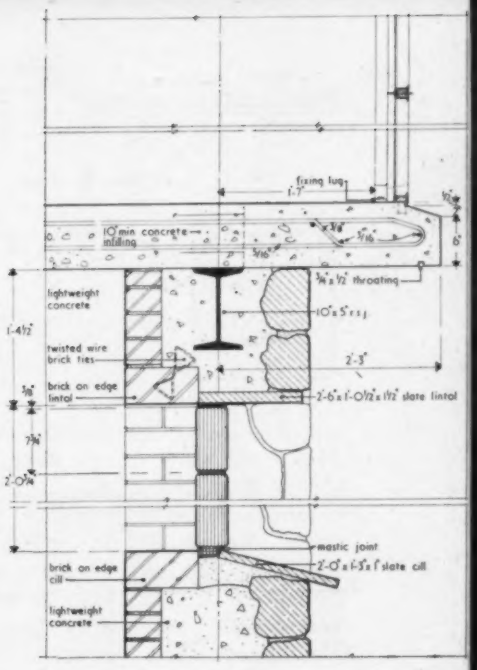
As water pressures in this part of Birmingham are insufficient to feed the top floors, a water pumping main has been installed with a partitioned-off receiving tank in the lift motor room. From there, the water supply is gravity fed throughout the factory. Drinking water taps have been provided in all lavatories, these being fed direct from the mains.

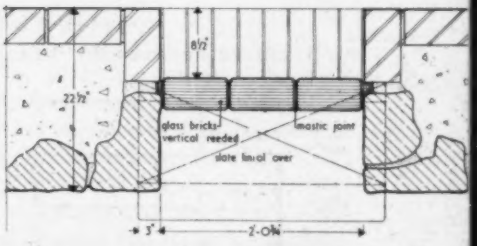
Structure

The building is steel framed with 11in cavity brick panels and hollow precast concrete beam floors.

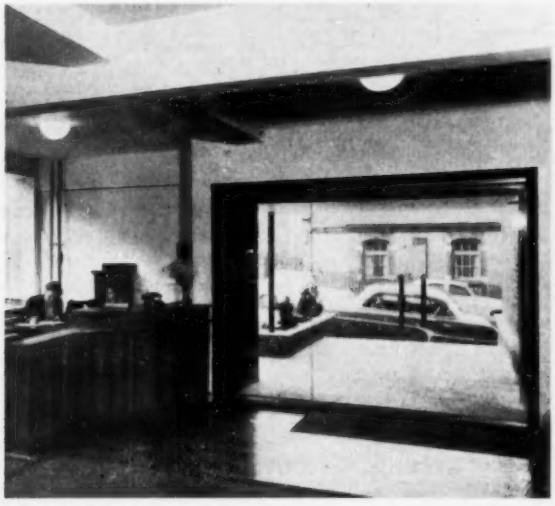
Thermal insulation to the top floor is provided by a 1½in thickness of aerated lightweight concrete, and by ensuring that the asphalt is, under normal weather conditions, covered by a 3in depth of water. The steelwork has been protected against fire by spraying with a thickness of exfoliated Vermiculite, the highlights being removed from the surfaces of stanchions in order to overcome the rough textured surface. A floss coat has been applied to the soffit of the precast concrete



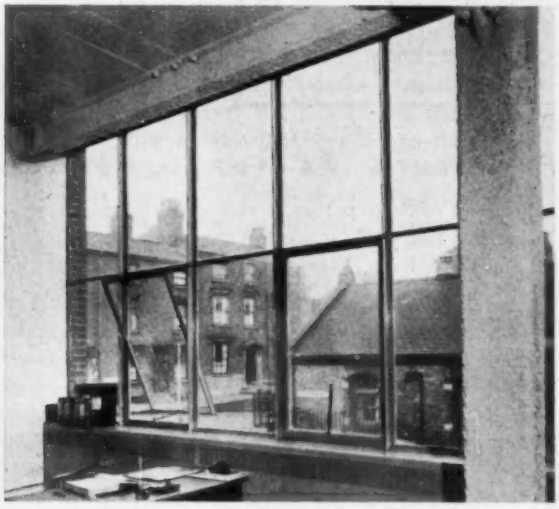




Shown above is patent glazing to the four floors of production space. On right is detail at foot of glass and glass brick windows to the basement. Plan of window is below section. The cut, below right, shows structural steelwork which has been protected against fire with an exfoliated Vermiculite spray



Entrance Hall



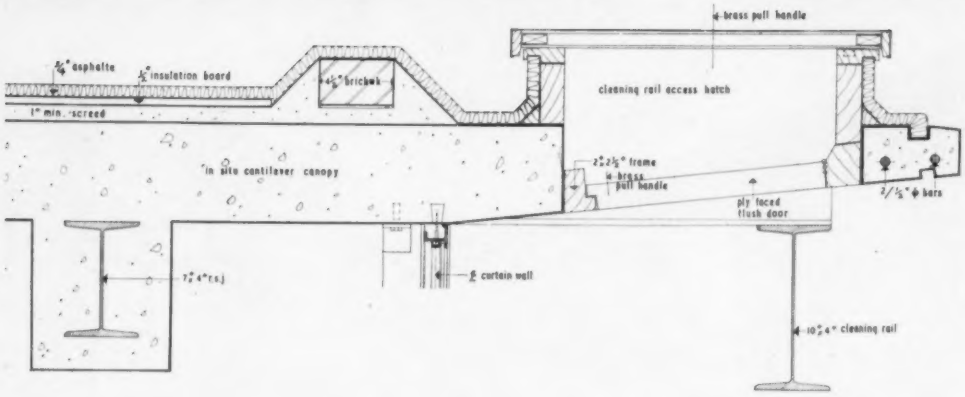
Typical Office

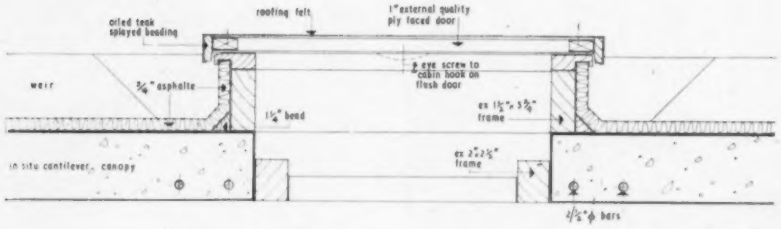
beams which has efficiently concealed all joints.

Rolled steel joists have been incorporated in the concrete eaves above the curtain walling for window cleaning. This is effected by hooking roped pulley blocks on to travelling gear which is permanently attached to the RSJ's. The lower end of the ropes pass through pulley blocks and are hooked to a cradle at pavement level from which window cleaners move across the face of the curtain walling as required. Trap doors have been left in the eaves at convenient points to enable the pulley blocks to be fastened to the travelling gear. The cradle is stored in the premises when not in use.

All production floors have been designed to carry a

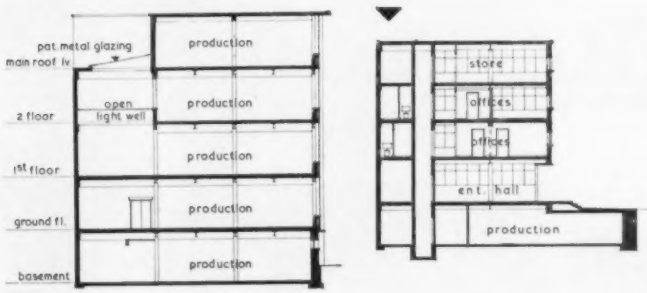
continued overleaf





1/10 F.S. DETAIL OF EAVES TRAPDOOR FOR CLEANERS' ACCESS, SHOWING CLEANING RAIL

TWO CROSS SECTIONS. SCALE: 1 IN = 40FT



architects in charge:
F. J. BARNETT, K. H. DENHAM

assistant in charge:
R. J. HEWITT

quantity surveyor:
NORMAN H. H. POOLE

general contractor:
J. J. GALLAGHER LTD.

sub-contractors:
Balustrading: Bigwood Bros. (Birmingham) Ltd. *Curtain Walling:* Henry Hope & Sons Ltd. *Doors (Sliding):* John Booth & Sons (Bolton) Ltd. *Fire Protection:* Pyrok Contracts (Midlands) Ltd. *Floors (Precast Concrete):* Croft Granite, Brick & Concrete Co. Ltd. *Flooring:* (*Asphalte*) Faldo Asphalte Co. Ltd.; (*Thermoplastic Tiling*) Rowan & Boden Ltd. *Glazing:* Pearce & Cutler Ltd. *Heating & Hot Water:* J. S. Wright & Co. Ltd. *Ironmongery:* Walker & Wood Ltd. *Lifts:* Pickerings Ltd. *Plumbing:* J. S. Wright & Co. Ltd. *Roof (Asphalte):* Faldo Asphalte Co. Ltd. *Sanitary Fittings:* A. D. Foulkes Ltd. *Scaffolding:* Scaffolding (Gt. Britain) Ltd. *Steelwork (Structural):* Banister Walton & Co. Ltd. *Tanking (Asphalte):* Faldo Asphalte Co. Ltd. *Telephones (Internal):* The Midland Home & Office Telephone Co. Ltd. *Terrazzo:* Marbolino & Co. Ltd. *Timber Strip:* Hollis Bros. Ltd.

Furniture Factory, Birmingham

super load of 2cwt per sq ft except where special provision has had to be made to carry milling machinery on the third floor. The retaining walls are of brickwork and the whole of the basement has been asphalt tanked.

FINISHES

Production Area

Walls: Colour washed fair faced brickwork. Ceilings: Colour washed exfoliated Vermiculite. Floor: Soft rubbed black asphalt. Asphalt floors have been incorporated in all production areas in order to avoid dust and to absorb surplus furniture tacks.

Offices

Walls: $\frac{5}{8}$in plaster. Ceilings: $\frac{5}{8}$in Carlite plaster. Staircase: Insitu terrazzo treads and risers with non-slip carborundum cube insets. Floor: Director's office and Board Room have close fitting carpets on rubber underlay; other offices have $\frac{3}{16}$in Thermoplastic tiles. The Entrance Hall has 1in nominal Sapele strip flooring. Entrance Doors are Armourplate with walnut handles and panelling to entrance lobby is Teak.

External Finishes

Bricks are multi-colour rustic wire-cut facings. Cills and heads to windows: Portland stone aggregate applied *in situ*. Canopies and eaves are rendered with Snowcrete.

Yellow Muroglass has been used in the production area curtain walling from floor level to height of approximately 3ft above floor level, and dark blue Muroglass has been used on the office block curtain walling with the exception of the one bay containing the office block staircase in which clear glass has been used from top to bottom.

A low random stone wall has been constructed up to the underside of the curtain wall cills along the Blucher Street and Gough Street elevation in order to relieve the somewhat large areas of glazing. These walls are pierced by a series of windows each 2ft square and glazed with 'Insulite' glass bricks.

POINTS FROM PAPERS

BUILDING IN THE ENGLISH LANDSCAPE

An address given to the Institute of Landscape Architects on 18th October
by Hon. LIONEL BRETT, F.R.I.B.A.

MY excuses for reading a paper to you on what I know to be a well-worn subject are that I think it uniquely important to this country, and that I do not believe that we have a consistent, agreed and functional attitude to the situation that confronts us. I had better explain straight away what I mean by these generalizations.

If you look at one of those atlases that show the population of the globe by black dots each representing a million people, you will find that the only places where the dots cluster into solid blackness covering the entire country are Japan, Belgium, Java, and England. This put us into a pretty tight category of congestion, and when you add to it the fact that of the four countries mentioned Belgium (except in the Ardennes) has already succumbed entirely to Subtopia and the other two have infinitely lower living-space standards than our own, you will realize that the problem of retaining the unique quality of English landscape in the face of these space standards is itself an absolutely unique problem.

Nor should we regard it as an esoteric problem, of interest to æsthetes only. We must remember that when people, each in their generation, go out and get killed for England, it is not the sanctity of treaties, the defeat of aggression, the balance of power or the security of our trade routes that they are thinking of, except as means to the safeguarding of the landscapes and even townscapes that mean home to them. These landscapes and townscapes were created by people like yourselves, who were able to see the wood for the trees, and see it a century ahead.

There is no need to describe to you the popular vision of England that we inherit from their work. It is enshrined in "Times" photographs, "Country Life" covers and railway posters. If I had to isolate one characteristic, it would be that in English landscape the architectural elements are trees rather than buildings—trees whether isolated like the monumental hedgerow elm, which when seen in series from a moderate height give a unique depth and recession to what is generally a comparatively modest view, or trees gathered into black clumps as on the Newmarket downs or Salisbury Plain or the Yorkshire dales.

If we think for a moment of other landscapes, we shall realize how unusual this is. Sub-tropical landscapes like the mediterranean, with their gentle fuzz of olives, scrub oaks or cork trees, are dominated by the hill-village, the campanile or the white fishing-port. In desert landscapes the architectural features, if they are not cubical mud buildings, are rock formations of extreme sculptural quality. And in the deep forests of the north or the equatorial rain forests the only incident is the farmstead or the village in its clearing. Of course there are parts of Virginia, Normandy and India that share what is generally called the park-like quality of English landscape, but generally, to my mind, in an inferior version.

While we are dealing in exceptions, perhaps I should admit that there are wild landscapes, as in Cornwall or the Cleveland Hills, where the isolated farm with its granite or limestone walls and slate or red pantile roof has great landscape value, and of course there is Salisbury spire pointing the junction of I don't know how many valleys, and Ely and Boston Stump riding over the fenlands. But mostly even the great houses lie in saucers of turf guarded by enormous hanging woods, and the cedars on the lawn are greater than the house itself.

Country building of the last half-century has quite failed to grasp this fact of scale. To begin with, we had the tea-cosy rusticity of the 1900s, the Kate Greenaway dreamland of bonnet hips, collapsed ridge lines, and tiny bottle-glass windows. Trees like clouds loomed vaguely in the background, natural features which nobody thought of as having to be planted by the hand of man. New planting, when indicated on housing layouts, took the form of Frenchified pleached limes or minor "ornamental" subjects, never visualized as overtopping the roof lines, with their romantic silhouettes and monumental chimneys, from which the smoke rose vertically into rooky skies. Nor was this romanticism confined to rural buildings. The best L.C.C. housing of the time, as well as Hampstead and Letchworth, were built on the same principles.

The fallacy of course lay in taking, against all evidence, a certain style of building (in this case Queen Anne) as eternally right in the English landscape and in forgetting that which matters is the landscape itself, or in other words in mistaking the part for the whole. This was only a recent example of that same literary attitude which produced the "cottage ornee" of the eighteenth century and the baby railway station of the nineteenth.

We may regard these townman's rusticities of the

Building in the English Landscape

past with amusement or affection. We are much more serious about our own romanticisms, such as the pedestrian piazza, with its bollards, plane trees, cobbles and sets, its "Architectural Review" pub and vertical features, which you will find languishing (for lack of popular support) on a thousand contemporary drawing boards. When at the start of this paper I complained that we had no consistent, agreed and functional attitude to the situation that confronts us, I meant this: that we architects have a picture of the kind of compact, urbane, sociable, centripetal development that we want to see, and have indeed struggled to build, that is quite unrelated to what happens when Englishmen get a free hand. We see the English landscape as the perfect backcloth, given, eternal, the heaven-sent greenbelt, the corn "orient and immortal wheat", the elms as solid as the Matterhorn—against which we shall set our own jewel of formality. Yet every popular pressure and economic fact seems to lead to a linear Subtopia stretching from London to Lancashire, with offshoots in other directions. The central question I want to answer is whether there can be any reconciliation, or whether we have to fight a sort of war to save England from the English.

At this stage we bump into two closely related problems. The first is a familiar one, to which each generation gives its own names and has to take up its own position. I quote as a recent example an article in the "Journal" of the A.A. by Mr. Lawrence Alloway, in which he takes Sir Herbert Read and Charles Eames, the American designer, as the opposite poles.

"Sir Herbert Read, laying down the law for art, explains the unity of effect of Gothic cathedrals as usually due to a single controlling mind, that of the master-builder, a man who was capable of conceiving the monument, not as a shell to be adorned (or as a Christmas tree to be 'decorated') but as an organism, every particular cell of which is morphologically and functionally related to the whole. This kind of talk belongs to philosophers who can by means of it strip artistic phenomena down to a few perfect cases, or possibly none at all, leaving the world full of flawed objects that don't reach up to the philosopher's fictions. Probably, Charles Eames would be more interested in the Christmas tree because its decorations can be organized in ways that approximate to the facts of life—seasonal, untidy, changeable, non-ideal. Eames has managed to re-think the problem which continually exasperates architects—the existence of people, whose circulation patterns and changeable or obstinate usages often constitute a system inimical to the architect's design. By leaving the use of his designs to the spectator Eames opposes the kind of thinking revealed by Sir Herbert and by architects interested in ideal situations."

I must tell you that my own sympathies, in what may for all I know be an unfair statement about these two particular people, are on the side of Charles Eames. I have always been more interested in the unauthorized tracks that air photographs reveal crisscrossing the fine axes of Washington, New Delhi and Welwyn Garden City than in the fine axes themselves, and when people ask me to "improve" their houses or their gardens my first reaction is generally that I like them very well as they are. On the other hand we must never forget that the responsibility of the artist is to give the public what it doesn't know it wants. And it is because I believe that the English, having created Subtopia, don't like it and would be glad of an alternative, that I thought this paper worth writing, so long as we remember that any alternative must stand the racket of twentieth-century life.

Which brings me to the second problem, which we must not ignore, though I think most people do. This is a problem of scale. You will have noticed that I have taken England as a unit, and I shall continue to do so. But there are, of course, Scotland and Wales, and just as Londoners used once to take their Sunday walks in the quiet country lanes around Paddington, and now take them in the public rights of way around Chalfont St. Giles, so, it can be said, they (and the rest of the 200-mile English conurbation) will soon be taking them in the Highlands. And of course there is abroad, which some English people already regard as the only thing that keeps them going. On this argument, communications can be left to dictate the scale of man-made landscape in Europe, as in America. Assuming that the economics of this make sense, we are here again, as designers, thrown back on a value judgement, and can only say, as I hope we do, that there is something about the *multum-in-parvo* variety of windy England as it still is that is worth cherishing, even in face of the uneconomic facts. Even a backgarden gets its character from multiple use (including the growing of uneconomic vegetables) and is no fun if it is all grass, or all paving, or all potatoes.

You may think all this an absurdly elaborate philosophical foundation for the simple proposal I am now going to make. I can only say that I think it needs it. The proposal is that we should now abandon the "housing estate" as our typical residential development. By "housing estate" I mean the kind of housing that results when a builder or a local authority buys a field, runs a road round it at a distance of 100 feet or so from the hedge, and fills it up with two-storey houses at a rate of ten or twelve to the acre. This kind of thing has had a long run for its money—over half a century if we include pioneer examples—and in the process has gone a long way towards destroying English landscape. Without taking you through the whole argument, which we all know, I think I can sum it up by saying that this

type of housing can never look right in England, because it is too repetitive and standardised to have anything remotely like a village character, yet too fiddling in scale and thin on the ground to deserve the name of a town. Even our best architects, in the new towns and elsewhere, have quite failed to make a success of it.

What are the alternatives? There are four of them, and I shall concentrate on the last because it alone has some pretension to being a new idea, on which I hope that you will comment. But at the start we must be quite clear that all four of them in combination will be needed to fill the gap. They are: urban housing, recreation housing, new towns, village housing. You will notice that I don't include suburban housing at all, because though at its best it can have great charm, I think we have more than enough of it to be going on with.

As to urban housing, it would be irrelevant this evening for me to do more than define what I mean by it. I mean what we nowadays call "mixed development", either in what you might call the L.C.C. form of high flats or maisonettes mixed with terrace houses of a density of something over 100 people to the acre, or in a form which I would like to see tried much more because it is much cheaper, namely a uniform three-storey development of houses, with flats at external and internal angles, which with building lines forty-five feet apart and 30ft walled gardens gives a density of a little under 100 people to the acre. Either way, and of course preferably with both, you would get towns that would be really fun to live in, for those who like towns, as well as cosy and compact, qualities worth having in a wet and windy climate. New housing added to any town that is a real town rather than a village, to any town of more than say 4,000 people, should invariably take this form.

"Recreated" housing is a pretentious word to indicate something a good deal more imaginative than reconditioning. "Operation Rescue" failed I think mainly because when it was launched it was still much less bother to build new houses than survey and work out ways of reviving old ones. Soon that may not be so. An era in which we have more brains than money may at long last bring new life to our dreary Victorian streets and derelict country cottages.

On the subject of building more towns, which is economically a highly controversial one, I would only say two things this evening, neither of which have anything to do with economics. One is that if we *do* build more new towns they must consist in the main of what I have defined as urban housing. I say "in the main" because we must allow on the perimeter for some houses with large gardens for those who can afford the high rents they should command, or for the exceptionally large family. But unless they are mainly urban they will not be towns and should not be so described. The second point follows from the first. The typical post-war master plan, loose, organic, shaped by local landscape forms, only makes visual sense on the site if the "solid" elements of the plan (i.e., the neighbourhoods) are twice as dense as they have been, or if you like half as green. The main trouble with the present new towns is that right inside the neighbourhoods the layouts are so loose and the forms so ungeometrical that all edges are blurred, nature wins everywhere, and even the odd point blocks barely compete with elms as landmarks; when the new planting has matured we shall once again have all garden and no city. We really must get back to the right angle and not allow our little hills to push us all over the place.

I come now to my fourth category, which I call "village housing". There are something like 25,000 villages in England, so that if we could on the average house even another dozen families in each of them we should be housing a lot of people.

Now I am well aware that if one is to discuss village housing realistically one has to make certain assumptions about the location of industry. In the ten years since the war industrial decentralization worked admirably as far as the development areas such as South Wales and Teeside were concerned. It also worked adequately in regard to the new towns. But it failed entirely to lighten the industrial load on the conurbations, and it failed almost entirely to get industry out into the country towns. The assumptions I am making here are that we don't lose sight of these objectives, and that we learn to think of industry regionally, and not in relation to the particular town it happens to be attached to. Thus, to take a concrete example, the existing Nuffield industries at Oxford and the new atomic developments at Harwell justify a limited urban extension of Oxford and possibly a small new town in Berkshire (not forgetting what we mean by "town" and "urban"). They also justify village housing within reasonable motor-cycling range (say twenty miles) of both centres of employment. If we draw similar circles of twenty-mile radius round existing or potential employment centres in rural England we shall find that about half our villages are suitably placed to house more people, *if* it can be done without spoiling them—and that is the question we must now consider.

What do I mean by village housing? I mean houses for people who are prepared to put up with the inconveniences of country life for the sake of a big garden and the chance to build their own home in their own way; houses for large families, or for old people or for people scared of noise and heights, houses, if you like, for the lunatic fringe. Council housing, of course, would have to play its part, though in a very different spirit, for rural workers who need it. But the accent would be on the owner-occupier.

You will be imagining a subtopian invasion of our innocent villages, so I must quickly pass to three essential safeguards.

The first is that the planning controls in our villages

Building in the English Landscape

and country towns must be in the hands of people with a real sense of place. These controls have been so ill-used since the war that many of us have felt that they might as well be scrapped. But I have come to realize that most small private developers positively want guidance, if it is tactful and broadminded, and that if we could get these controls into the hands of the right people we need not fear for rural England.

The second safeguard is the existence of a wide choice of ready-made rural house designs by the best architects. You probably know that the R.I.B.A. has for some time been working on this idea. The only trouble about the scheme is that it takes such an unconscienable time being born.

The third safeguard brings us right back to where we started: tree-planting. Trees are the real architecture of our countryside, and if they are well-chosen and well-sited the design of the houses among which they stand has very little landscape significance.

The planting of forest trees among small houses has not had the research it deserves. Summer and winter angles of sun, thickness of summer foliage and winter tracery, root habits, form in relation to landscape form are all aspects on which more work is needed if we are to re-establish the perfect relationship between a village and its tree groups that seems to have been instinctive long before the eighteenth century made it conscious. On the face of it, one would think that full-sized trees should either stand close to the walls of buildings, as one so often sees them in Scandinavia and in New England, or at a distance which will bring the noonday sun above their tops in summer and below their tops in winter. But of course only certain kinds will be suitable for each of these positions, such as the birch and acacia close to buildings, and the oak and sycamore at a distance. Intermediate could come more transparent trees such as the ash and London plane. The essential point is that the houses should look through the trees and not expect to see over the top of them.

Approval to the building of new houses in villages would of course have to be made conditional upon the planting and maintenance of the right trees in the right places—an insignificant addition to the cost of a house and another reason for having a landscape specialist inside every county planning department.

I am not suggesting that all other sins can be compounded for half a dozen turkey oaks. All the rules for country building must apply, such as the long horizontal, the relaxed or dramatic use of contours, and the eschewing of urban paraphernalia such as concrete trim, unnecessary sign posts, seats and litter baskets. My emphasis on tree planting is because without it none of the other virtues has much landscape value. And I need hardly add that very many existing examples illustrate this point, where very decent rural district housing sticks out like a sore thumb for lack of trees. There is a formidable leeway to make up.

Given the safeguards I have mentioned, I believe from my own observations that most English villages could take a fifty per cent increase of population without loss of identity or character or noticeable effect on the surrounding landscape. The vital thing is to get hold of the right sites—sites, that is to say, inside the village compound, rather than in the fields outside. The amount of semi-waste land in existing villages—half-used allotments, derelict orchards, odd corners under brambles or nettles—is quite surprising, but to get it for house sites would often need compulsory powers, which would seem as appropriate in these cases as in the case of agricultural land outside, and often less damaging to the local and the national economy. I don't say that we should never go outside the present perimeter. Many villages need to be larger for social or educational reasons and all would gain from the admixture of non-agricultural workers. The great thing is that the final decisions on infilling, on expansion, or on both, should be taken on the advice of an expert in landscape, and that we should learn to take our landscape as seriously as we take our coal reserves, our electrical generating capacity, or our scientific know-how —national investments of incalculable value.

I have not tried this evening to put things statistically, nor to suggest ways and means of improving our planning machine or its operators, which we have lately heard admirably discussed by Sir Patrick Abercrombie. "Building in the English landscape" is in the individual case a matter of training and intuition, and in generality a question of how and where to house our people. Because I have nothing new to say about the first, I have thought it best to concentrate on the second, and to put to you a perfectly simple, perfectly revolutionary and I believe perfectly workable policy.

The picture of England I would like to leave you with is of an Atlantic swell of farmland, islanded with villages in which ancient cottages newly reconditioned and boxy little twentieth-century dwellings are jumbled together. These villages would be "bosom'd high in tufted trees", compensating for the gradual disappearance of the hedgerow elm. Out of this countryside new cities would eventually rise, "riding" (and here I quote again) "above the rolling fields and woodlands like cathedrals, like full-rigged ships". And for a start, to get back to earth, we must give a terrific push to tree-planting, except that in the age we live in, instead of John Evelyn writing a book for the squire, local authorities will have to know as much about trees as they do about drains, and have as much power to get them. And they will have to take their new responsibilities not in a restrictive but in a creative spirit, as people not bolstering up an old landscape but building a new one.

Information Digest

OFFICIAL PUBLICATIONS

● **British Standard Specifications,** from British Standards Institution, British Standards House, 2 Park Street, London, W.1. Telephone : Mayfair 9000.

● **B.S. 1455 : 1956. British Made Plywood for General Purposes.** Price 6/-.

The standard of 1948 has now been revised to include types of wood not then available, while not listing all possible woods as this would make a cumbrous document and be liable to error and misunderstanding. The kinds of plywood suitable for general use are defined, so it should be possible to specify with confidence plywoods suitable for painting, for example, without rising grain or requiring filling. Blockboards, veneered (ornamental wood and plastic, coated) and speciality boards are excluded from the standard. Bonding tests are given in appendices, but it is stressed that these need not be applied to all boards during manufacture, but in the event of failure give the basis for determination of the fault.

● **Selected List of British Standards for Housing.**

Under trade headings such as Foundations, Roofing, Hardware, etc., the list names of materials for which B.S. have been issued, the date of issue and price. The present list is dated October, 1956, and supersedes that of August, 1955 (PD2230). Where standards have been changed from those current at the time of the former issue these are so marked. Standards summarized in B.S. Handbook No. 3 are also marked and, as might be expected, include practically every standard listed, exceptions being mainly those standards recently added or changed which amount to about 20 per cent of those in the list. Codes of Practice are also included in the list under the same trade headings.

● **B.R.S. No. 92. Pulverized Fuel Ash in Building Materials.** September, 1956. H.M.S.O., price 3d.

The problem of disposal of fly ash from power stations has produced a number of uses, one being as a form of pozzolana for concrete and mortar, another as aggregate for building blocks while use in clay building bricks results on occasion in better bricks and economy in the use of brick earth. As much fly ash as 85 parts to 15 of clay has been used successfully and generally, at the proportions normally used, without obvious affect on the appearance of the brick. Prejudice against the use of bricks incorporating fly ash should be guarded against, not only because its use is not in fact entirely a new development, but in addition because the bricks are expected to stand up to all tests to which clay bricks would normally be subjected.

● **Solid Fuel Appliances, List No. 13.** Issued by Coal Utilization Council, July 1956, 3 Upper Belgrave Street, London, S.W.1. Sloane 9116.

The previous list should be thrown away, for the new issue is much more comprehensive, indicating perhaps that the review of claimed efficiency has been completed. As an indication of the difference in the lists it will be found that there are twenty open fires named in List 12 and over eighty in List 13, all having the asterisk indicating approval for housing. New names of types appear and some old friends are missing. The demand that inset openable stoves with boilers must have provision for convection heating is surely unreasonable. In the summer months convection is undesirable while in winter heating can be obtained by opening the doors provided. This odd rule results in one well-known inset stove with large capacity boiler being omitted from this list and being lumped in with Independent Boilers which, of course, it is not. This could be most misleading, and experience has shown that this boiler is quite sufficient without convection to heat a small room while giving ample hot water.

The comparison of theoretical and claimed efficiencies is most interesting and could be misunderstood. No doubt the theoretical efficiency is the proper basis on which a boiler should be chosen, but the manufacturers ratings give a rough guide to what can be expected if the fire is raced (fuel wastefully used).

TRADE ASSOCIATION PUBLICATIONS

● **Timber Fencing and Gates.** (a) For housing, etc.; (b) for agricultural, etc., purposes. Timber Development Association Ltd., 21 College Hill, London, E.C.4. City 4771.

Two booklets have been issued dealing with fencing and allied works as indicated above. Consisting mainly of illustrations, the sketches show popular inexpensive and traditional wood close-board and open fencing, each type having a brief specification alongside. The only kinds of wood specified are oak (for close board) and chestnut (for open pale), so it may be presumed that softwoods are contemplated for other types and are certainly most suitable where the wood is to be painted. The last pages suggest preservative treatment by impregnation or painting. The need for thorough treatment by preservative under heat and for pressure for all softwood has been emphasized, but oak and chestnut might have been included. Gate designs are shown and suggestions for loggias and wind screens. Galvanized nails are recommended for oak, chestnut and cedar, but wire nails are considered satisfactory where softwood is preservative treated or painted—a short term view as the wire nails always rust under paint, and either split the wood or fail through corrosion before many years are out.

The second booklet illustrates three types of wood rail fence and some post and wire fences, also wood gates of suitable patterns, all designed to be stock-proof. Recommendations are given for preservative treatment and for painting.

The specifications are suggestions only as to height for which the designs are suitable and post sizes, but many variations occur to one in skimming through the descriptions. While some of the designs are made in standard panels most of the fencing would be made to order so heights and materials can be varied when ordering from fencing suppliers.

● **35th Annual Report, British Cast Iron Research Association,** Alvechurch, Birmingham.

Most of the work has been devoted to improving qualities and overcoming production difficulties, but in addition

Information Digest (continued)

investigation was carried out on causes of corrosion and electrolytic action. Electrical continuity in subground cast-iron pipes was found to be defective in some cases. The Advisory Service dealt with 126 inquiries relating specifically to dust and dust control in foundries including problems arising out of the Clean Air Act, 1956, entailing visits to 74 factories, which is at least a start.

● **Ferro-Cement: Its Characteristics and Potentialities. Professor P. L. Nervi (trans.). Cement and Concrete Association, 52 Grosvenor Gardens, London, S.W.1.**

Those unable to hear Professor Nervi when he visited this country last year will be interested to read the translation of this article which appeared in "L'Ingegnere", 1951, Vol. I. The title relates to a material differing from ferro-concrete. Conversion factors from metric to English are given. He describes his early experiments with cement/sand bound wire mesh with some rod reinforcement, when the finished slabs, of thickness little greater that that of the reinforcement were found to have quite remarkable elasticity and resistance to cracking. The behaviour in fact differed considerably from common reinforced concrete, while much time, labour and material were saved through using a plastic mortar applied directly to the mesh, eliminating shuttering.

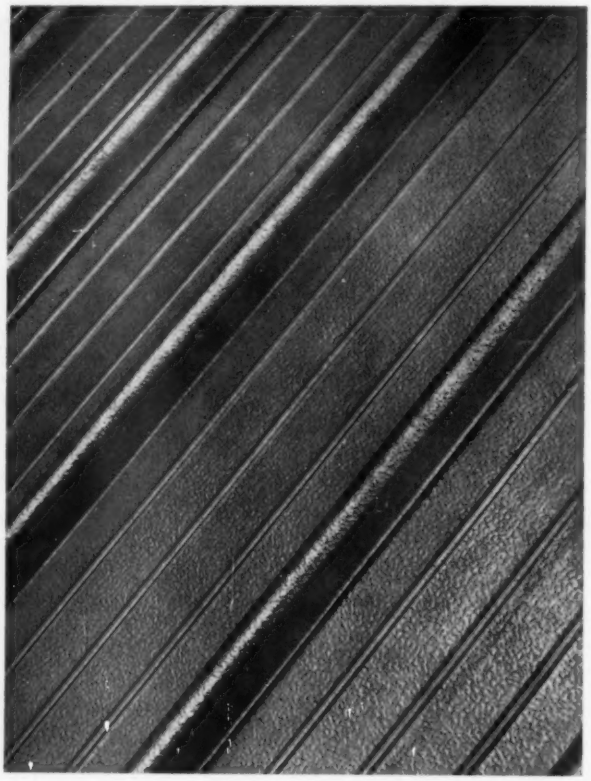
Professor Nervi describes the construction of a 165 ton motor yacht and 40ft sailing yacht, the hulls in ferro-cement, and says that in five years' use no maintenance has been done and no water has penetrated. The advantage of this form of construction, he contends, in addition to low maintenance and first cost, is the increase in interior usable space through absence of timber framing, monolithicity of construction and great strength as proved by various mishaps which incidentally demonstrated that repair is a simple matter. Such rigorous tests indicate that ferro-cement needs no special proofing when used in buildings.

Reference is made to the well-known Exhibition Hall "B" at Turin, and to other work carried out in ferro-cement and other achievements by Professor Nervi and his company, written with much enthusiasm and a justifiable sense of achievement.

In the same publication are listed translations of a large number of articles on cement and concrete which have appeared in foreign technical journals and available at the Association's library.

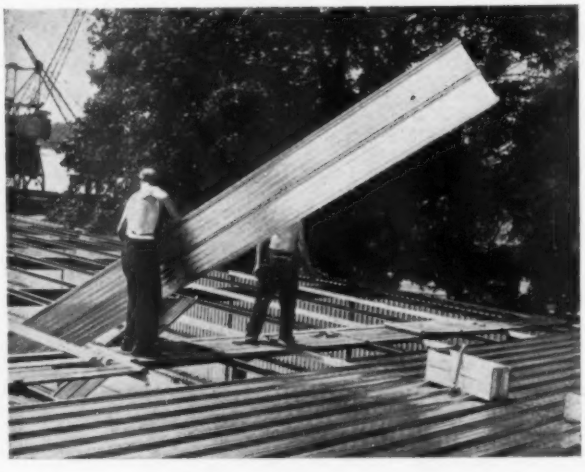
● **Report of the Zinc Development Association (October 1956), 34 Berkeley Square, London, W.C.**

The Association has now moved from Oxford to London and is installed in elegant (internally at least) new premises. The information service and library is thus available rather more readily to a greater proportion of trade users. There is no research department but the Association assists, guides, co-ordinates and subscribes to research by other bodies, covering zinc as a metal and in galvanizing. Attention is being paid to protection of buried steelwork such as stanchion bases by zinc anodes. A Code of Practice for zinc roofing is now being prepared under the ægis of the British Standards Institution, to replace BS849.



"Noral" Snaprib aluminium building sheet, has now been given a new look as a result of improved fabricating techniques introduced by the manufacturers, Northern Aluminium Company Ltd. The sheeting which has already proved very popular with both architects and builders owing to its unique fastening and other features is now normally produced, at no extra cost, in a "stucco" embossed finish. This stucco finish improves the decorative appearance and so increases the architectural uses of the sheeting; it has a number of other advantages over the original plain bright finish that it replaces.

A close-up view of the new stucco-finish Snaprib shown above and the picture below shows the finished sheets being erected in Norway



● **Mastic Asphalte in Building Construction : Specifications and Safeguards.** Natural Asphalte Mine Owners & Manufacturers Council, 94-98 Petty France, Westminster, London, S.W.1. Free.

The Council in issuing this booklet draw attention to the fact that variations in specification of individual manufacturers are no longer allowable and that the specifications of the British Standards Institution are adopted by all member companies. The "Kite" mark of the B.S.I. is now allowed on all approved products, carrying with its authorization powers of inspection and testing in the makers' premises.

Architects, Engineers and Quantity Surveyors are recommended to require the specialist contractors to furnish a manufacturer's certificate of origin of rock asphalte used, a certificate that all blocks of mastic asphalte delivered to the site will bear the "Kite" sign and B.S. number and to furnish particulars of the place of manufacture of the mastic asphalte. Samples of raw asphalte are to be made available for analysis from blocks and pots. (The Council has technical facilities to carry out tests.) Advice on the specification of asphalt can be obtained free of charge from the Council's Technical Department.

The booklet lists the BS for roofing, damp-proof coursing, tanking, flooring, pitch-mastic flooring and Codes of Practice for roofing and flooring.

● **Fireplace Fixing Instructions.** From the Glazed and Floor Tile Manufacturers Association, Federation House, Stoke-on-Trent, or National Tile Fireplace Makers Association, 381 Salisbury House, London Wall, E.C.2.

These are being sent to all Local Authorities and similar bodies concerned with housing but bulk supplies of the instructions in envelopes pre-sealed and ready for tying to surrounds are obtainable from the trade bodies named above. The instructions are unambiguous and illustrated by line sketches of sections and an isometric elevation. For reasons not explained the sections show the tops of the firebacks raked up to meet the flue, although a note states that a smoke shelf can be formed there "if desired". As the B.R.S. and Count Rumford have had something to say about this it seems pointless to encourage the fitter to form the flue the undesirable way. Except that a smoke shelf forms a collecting place for soot there is nothing to be said against it and there is much to be said for providing it. As these instructions are also being handed out to those building trade operatives attending the Coal Utilization Council's appliance fixing courses at technical colleges and Council Training Centres it would be as well to decide whether the soot shelf is to be recommended or not, on B.R.S. advice.

TRADE PUBLICATIONS

● **Medrac Radiant Panels.** Dulrae Ltd., Griffin Lane, Aylesbury.

Unobtrusive heating is illustrated in a leaflet on the use of electric radiant heating panels. The photographs show how these may be used to give local heating in churches and other high buildings—in one case the panels were fitted under the pews. The simplicity of installation is obvious and ease of control of use or consumption is also apparent. Thermostatic control can be provided. The makers point out that prices are now lower than they were in 1948 and that the panels are guaranteed for five years. A free technical advisory service for the planning of installations is available and advice as to decoration, erection and wiring. The surface temperature of free standing panels is about 150 deg. F (68 deg. C).

● **New Designs in Lighting Fittings.** Troughton & Young Ltd., The Lighting Centre, 143 Knightsbridge, London, S.W.1. Telephone : KEN 3444.

This is another offering of sophisticated light fittings for table or desk use, floor standards, brackets and pendants, designed mainly for commercial installations. The shades are in enamelled metal and tinted plastic in shapes that are, like Paris hats, designed to catch the eye. The stems, whether as standards, brackets or pendants, are as slim as possible and finished in satin brass, black bronze or plastic relieved with brass collars. All designs are simple but elegant.

● **Hydrol Silicone Solution.** Cement Waterproofers Ltd., 147 Bollo Bridge Road, London, W.3. Telephone : ACOrn 0404.

Silicones as waterproofers are well known and the B.R.S. recently issued a Digest on them. The makers of Hydrol DB Silicone solution claim it to be the cheapest on the market, suitable for brickwork, concrete, stone, cement paints and renderings. Accounts are given of tests following application to bricks and concrete, treated and untreated and of cement painted surfaces. The pamphlet points out that where efflorescence has occurred or may occur due to salts being brought to the surface by dampness drying out the waterproofer will prevent efflorescence provided always that the dampness does not come from the back. The solutions are colourless. While the solution primarily referred to is a 5 per cent solution applied direct from the container, alternatives are available in a hydrocarbon solvent (mildly inflammable) known as Hydrol DB 29 solution and Hydrol DB 30 silicone solution which can be diluted in water, particularly suitable for limestone but having only about 90 per cent effectiveness of the DB 29 solution. It is claimed that the solutions may be effective for up to fifteen years.

● **Streetlighting Equipment and General Catalogues.** A.E.I. Lamp & Lighting Co. Ltd., Crown House, Aldwych, London, W.C.2.

Both collections are in the form of loose-leaf or replaceable files, enabling users to keep the catalogues up to date as new or improved products are circulated.

The Streetlighting catalogues cover the complete range comprising light source, lantern, bracket or mounting, shaft and base or root. Light distribution diagrams are given for the lanterns and full information as to positions of entries, specification of material, wiring, light control and alternative arrangements, the main dimensions of the lanterns being given on scale details in addition to photographs. Fluorescent, sodium, mercury and tungsten lamps are available.

The brackets are mostly of very slight pattern concrete but galvanized steel brackets are available alternatively where monolithic construction is not practicable. The posts are of fine grade smooth finish spun concrete of clover-leaf, round and square sections and show some very pleasing lines. Provision is available for fixing de-restriction signs and for ladder arms on some models. Wiring maintenance boxes are formed in the posts and are rather obtrusive in some of the slender designs. Most of the post and bracket designs are noted as having been approved by the Council of Industrial Design.

The general catalogue comprises catalogues dealing with Lamps—fluorescent, discharge, decorative, infra-red, projector, etc.—Fluorescent light fittings, reflectors, mount-

Information Digest (continued)

ings, diffusers, trunking and accessories, and Industrial fittings covering shades, galleries, diffusers, handlamps, etc. All have dimensioned illustrations and all the technical data needed for selection, ordering and fixing. The binder is arranged to take ten catalogues, easily replaceable as new issues come out. It is intended that the series shall be reviewed and re-issued annually.

● **Metsec Joists.** Metal Sections Ltd., Oldbury, Birmingham.

A series of six "open wet" joists is offered having channels for the horizontal compression and tension members and zig-zag rod forming the open web. The channels are filled with softwood fixing battens. Depths of joists are 6in, 6⅞in, 8in, 9¼in, 11in and 14⅜in extreme (the wood projecting from the channels about ¼in). The width of channel and, consequently, batten varies from 1⅜in in the smallest joist to 2½in in the largest, the former giving just sufficient fixing for butt ended floor boards.

Design data are given in the form of a table giving spans for each joist type and resulting maximum permissible loading at various centres of joists from 12in to 72in. Various forms of connection are available from simple hooks to double cleats and shear strength can be built up by bolting on steel plates over intermediate points of support in the same way as the ends are strengthened by welded-on plates. Bridging can be arranged by employing light tubing either crossed or parallel. Double joists can be used for supporting longitudinal loads such as partitions, the joists being rigidly tied together with steel channels. Noggings are also available for suspended ceilings in metal tee systems. Where the ties of the joists are to be exposed the timber fillets can be omitted from the bottom channels and metal cover strips can be sprung on.

Open-web rafter trusses are also available in which the truss ties are tubes with intermediate tubular hangers where required. These can span up to 40ft. A table giving permissible loading for trusses at various centres from 24in to 24ft is given. Details show how purlins, additional rafters, joist connections, and bracing can be fitted and methods of suspending ceilings.

To assist in arriving at dead loads a list of weights of a number of materials is given but is scarcely exhaustive, rough boarding and roof tiling being omitted and the weight per foot run of the joists and trusses is not given. Presumably a designer would know what were the permissible live loads: a schedule of these would be helpful.

● **Pitakote Paint.** Allweather Paints Ltd., 36 Gt. Queen Street, London, W.C.2.

Thirteen shades are offered in this emulsion paint which is designed to resist chemical attack such as by alkalies, acids, oils, fats, many solvents, beer and milk and to stand up well to sea water. It is supplied in two parts—a "base" and an "activator", mixing being 2:1. It can then be brushed or sprayed, hardening taking about 24 hours although surface dry in about four hours.

Covering capacity on a smooth non-absorbent surface is between fifty and sixty yards.

● **Vermiculite Plaster.** Mandoval Ltd., 51-55 Strand, London, W.C.2. Free.

The origin, treatment and uses of vermiculite are described in this booklet. The expansion of the mica-like grains is due to release of moisture on heating, the increase in volume being about fifteen times. Most of the material comes from the Transvaal.

Vermiculite is chemically inert so cannot cause corrosion while it will stand heat up to 2,200 deg. F. Its light weight reduces the loads on framing when used as the filler in plaster, being from 7lb to 9lb per cubic foot.

Vermiculite plaster has considerable value as a fire-resisting skin and as an insulating material both as to heat and sound.

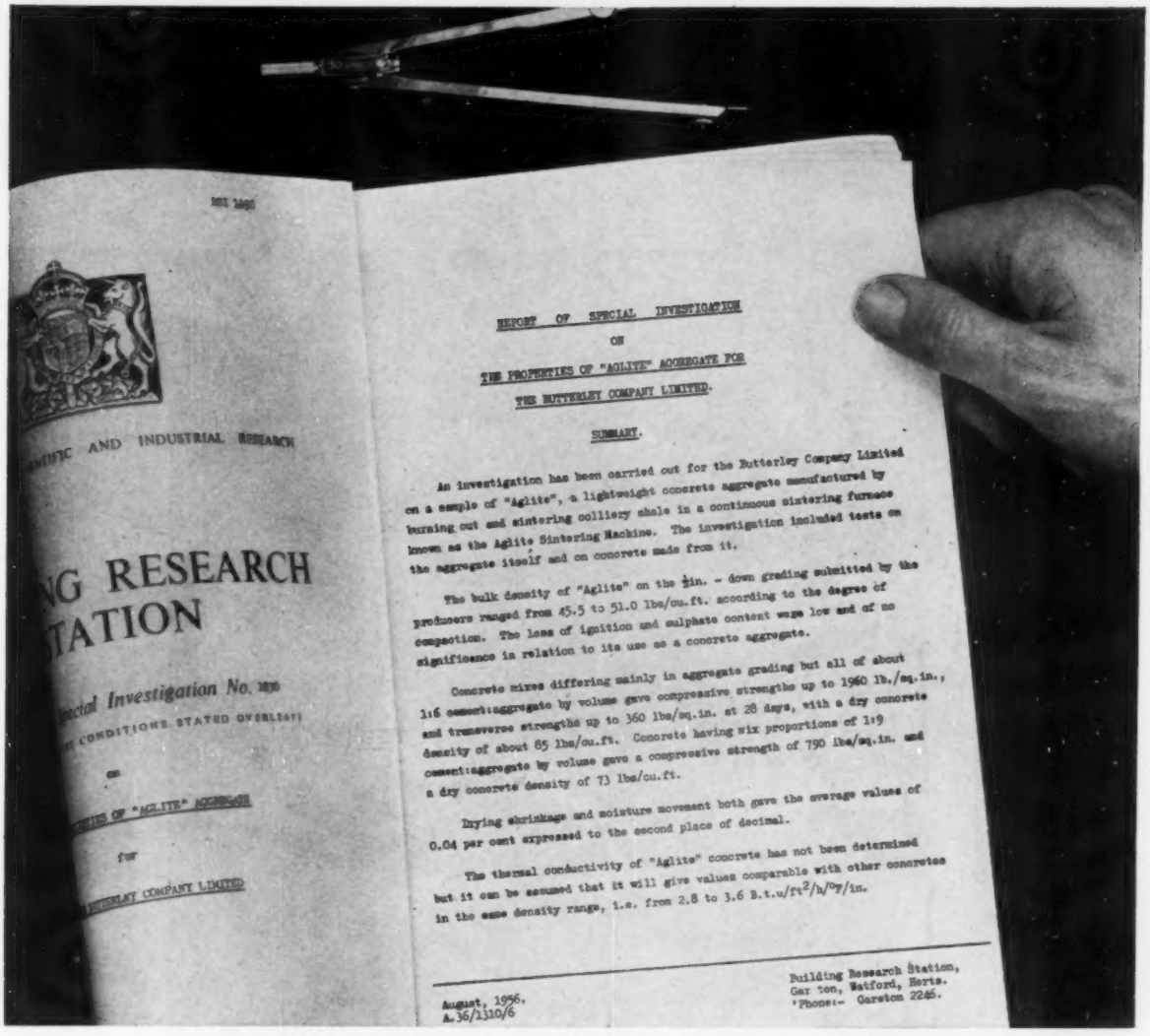
Specifications are given for vermiculite-gypsum plasters and vermiculite-cement plasters. Mixing instructions are given for those who wish to make up their own vermiculite plasters, also advice on application, of which the most noteworthy is that the successive coats should be applied while the undercoat is still damp as a very strong suction develops in the dry plaster. Wetter floating or setting coats are therefore needed.

Over five hundred Atlas Fluorescent fittings have been used for the lighting of Messrs. Joplings department store at Sunderland. This installation uses troffer units designed to fit a special type of steel construction for "Rotterdam" ceilings on the first three floors of the building. Each troffer accommodates three 80 watt "Quickstart" tubes and the resulting light levels are between 45 and 50 lumens per square foot. Electrical installation was by Messrs. Steels Engineering Products Ltd. Architects: Wm. & T. R. Milburn. Atlas lighting fittings: supplied by Messrs. A. S. McHugh & Co. Ltd.

● **Metal Windows, etc.** Doodson & Bain Ltd., Wilson Street Works, Manchester, 11.

A comprehensive catalogue has been issued covering the whole range of products. These include curtain walling, industrial windows, cottage windows and doors, "Z" range, agricultural windows and lantern lights as standard products but special designs can be made to requirements. There is also a range of metal partitions.

The full range of BS sashes is available and for hospitals, schools, etc., horizontally sliding (concertina) windows are offered.


NG RESEARCH
TATION
REPORT OF SPECIAL INVESTIGATION
ON
THE PROPERTIES OF "AGLITE" AGGREGATE FOR
THE BUTTERLEY COMPANY LIMITED.
SUMMARY.
An investigation has been carried out for the Butterley Company Limited on a sample of "Aglite", a lightweight concrete aggregate manufactured by burning out and sintering colliery shale in a continuous sintering furnace known as the Aglite Sintering Machine. The investigation included tests on the aggregate itself and on concrete made from it.
The bulk density of "Aglite" on the ¼in. - down grading submitted by the producers ranged from 45.5 to 51.0 lbs/cu.ft. according to the degree of compaction. The loss of ignition and sulphate content were low and of no significance in relation to its use as a concrete aggregate.
Concrete mixes differing mainly in aggregate grading but all of about 1:6 cement:aggregate by volume gave compressive strengths up to 1960 lb./sq.in., and transverse strengths up to 360 lbs/sq.in. at 28 days, with a dry concrete density of about 85 lbs/cu.ft. Concrete having mix proportions of 1:9 cement:aggregate by volume gave a compressive strength of 790 lbs/sq.in. and a dry concrete density of 73 lbs/cu.ft.
Drying shrinkage and moisture movement both gave the average values of 0.04 per cent expressed to the second place of decimal.
The thermal conductivity of "Aglite" concrete has not been determined but it can be assumed that it will give values comparable with other concretes in the same density range, i.e. from 2.8 to 3.6 B.t.u/ft²/h/°F/in.
August, 1956.
A.36/2310/6
Building Research Station,
Garston, Watford, Herts.
'Phone:- Garston 2246.

Aglite: first test report...

Report by The National Building Research Station on preliminary tests on Aglite.

Further tests are now in progress on concrete mixes of "Aglite" and varying proportions of ordinary and rapid-hardening Portland cements.

These mixes have been designed by our technicians to yield high strength concretes having crushing strengths of the order of 5,000 lbs./sq.in.

The Building Research Station will be publishing their report on these tests as soon as they are completed.

We anticipate that our first "Aglite" production plant will come into full operation before the end of this year.

From knowledge based not only upon practical experience of over 30 years in U.S.A., but also from pilot plant output in this country, we predict with confidence that, as "Aglite" becomes available in bulk, it will rank among the essential materials upon which depend the construction of the Future.

If you would care to receive the preliminary report shown above, we shall be pleased to send you a copy and, at the same time, answer any questions regarding the properties and capabilities of Butterley-"Aglite".

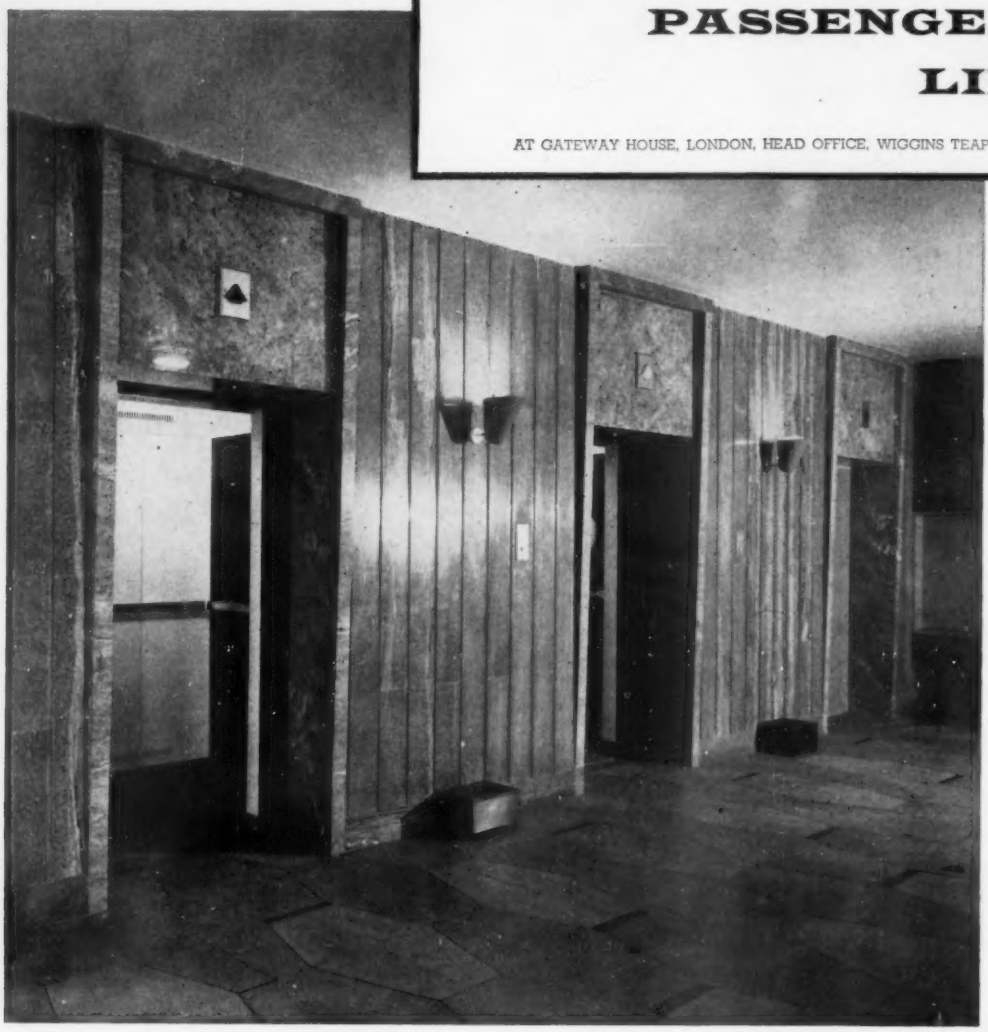
BUTTERLEY AGLITE

Write to
The Butterley Company Ltd., Aglite Division, Butterley Hall, Nr. Derby · Tel. 411 Ripley (9 lines)
London Office: 9 Upper Belgrave Street, London, S.W.1 · Tel. Sloane 8172/3

AG 8117

ELECTRIC PASSENGER LIFTS

AT GATEWAY HOUSE, LONDON, HEAD OFFICE, WIGGINS TEAPE GROUP



The installation consists of five high speed passenger lifts consisting of one bank of Triplex control and one bank of Duplex control. Two panel bi-parting power operated doors are fitted to car and landing entrances. One of the Triplex control lifts is fitted as a Fireman's lift to comply with the requirements of the London Fire Brigade.

Architects: Messrs. Trehearne and Norman Preston & Partners.
Contractors: Messrs. Trollope & Colls Ltd.

HAMMOND & CHAMPNESS LTD.

Gnome House, Blackhorse Lane, London, E.17 Telephone: LARkswood 1071

Industrial Notes

Changes have been made in the programme of the sessions organized by The British Waterworks Association at the Public Works and Municipal Services Congress on Thursday, November 15, 1956. In place of the Debate on Drought, at 10 a.m., Mr. Arthur W. Kenny will present his paper on "Radioactivity and the Water Industry" (originally scheduled for 2.30 p.m.) and this will be followed by a discussion on the Report of the Committee on Synthetic Detergents. The discussion will be opened by Dr. E. Windle Taylor, Director of Water Examination, Metropolitan Water Board. At 2.45 p.m. an address will be given by The Rt. Hon. Duncan Sandys, M.P., Minister of Housing and Local Government. Afterwards a discussion will take place on the Minister's address, consequent upon the issue of his circular on Re-grouping of Water Undertakings.

The Board of Trade announce that they are considering an application for drawback of import duty under Section 9 of the Finance Act, 1932, as amended, in respect of imported standard ¼in hardboard in sizes not over 3ft by 7ft and exported standard hardboard faced flush doors. Representations by interested parties should be addressed in writing to the Board of Trade, Tariff Division, Horse Guards Avenue, London, S.W.1, not later than November 19, 1956.

W.I.D.M.A. (Wallboard Importers' Distributors' and Merchants' Association of the United Kingdom) is to be wound up within the next six months. Two separate associations, one representing the distributors and the other the importers of wallboards are to be formed but the exact shape of the organizations is not yet clear.

Plans are now being completed for the next Building Exhibition, which will again be held in all the halls of Olympia, London, from November 13 to 27, 1957. As the exhibition is now so large, the organizers have been considering how they can help visitors, particularly those from overseas, who have specialized interests. Continuing a policy, which has been developing for some years, the Builders' and Contractors' Plant section and the Woodworking Machinery will now be in the west end of the Grand Hall, the Empire Hall and the west end of the National Hall.

Mr. R. L. Onions has been transferred from the head office of Taylor Woodrow (Building Exports) Ltd., London, marketing agents for the Arcon Group of manufacturers of prefabricated buildings, to be resident representative in Iraq, centred in Baghdad, from the end of October.

The Fixings Company of 5 New Bridge Street, Ludgate Circus, London, E.C.4, states that using the Cartridge Hammer method, they will undertake the installation of fixings, providing all the equipment, materials and skilled labour, for pipe runs, radiators, electrical fittings, suspended ceilings, battening, expanded metal, etc. Fixings can be made in steel, concrete and brick with equal facility and at a fraction of the cost and many times the speed of drilling, plugging and tapping. A wide variety of ¼in, 5/16in and ⅜in male and female threaded studs and rivets are available to meet varying requirements and operators can be on any site in the London area within twenty-four hours. The company also handles the sales of this equipment and will train operators and advise on the correct stud/carriage combination for different applications.

The Council of the British Cast Concrete Federation, one of the Industries which initially recommended the stabilization of prices, has again advised its members that whenever practicable they should maintain their existing selling prices until June, 1957. Many members have already individually announced their intention on the lines of the Council's recommendation. In making public this recommendation, the President, Mr. Reginald H. Bates, M.B.E., emphasized that the B.C.C.F. is not a price-fixing body.

The current issue of "Flooring Topics contains an article on the tendency in America for wall coverings to compare in durability and design with present day flooring materials. This journal may be obtained free from Publications Section, Tretol Associated Products Ltd., Tretol House, The Hyde, London, N.W.9.

British Oxygen Chemicals Ltd., were awarded first prize in the Display Class for their stand at this year's Purchasing Officers' Association Minibition recently held at Scarborough. The judge was Sir Stephen Tallents, president of the Design and Industries Association.

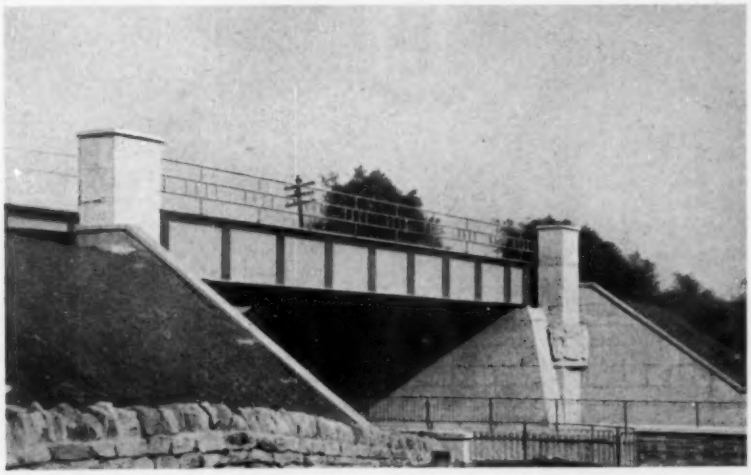
At a recent meeting of the E.J.M.A. Council, Messrs. Abbott and Griffiths Ltd., of Christchurch Road, New Milton, Hants., were elected as members. Amongst the matters discussed were conditions of sale, terms of credit, the Restrictive Trade Practices Act, quality of imported softwood, productivity, automation, the establishment of a European Common Market and the proposals of N.F.B.T.O. concerning nationalization of the building and civil engineering industries. The Council next meets on December 13.

Mr. Robert Appleby has been appointed to succeed the late Mr. J. V. Franklin as managing director of Black & Decker Ltd. Mr. Appleby also retains his position as Director of International Operations whereby he is responsible for all the parent company's activities outside U.S.A. and Canada.

The Yorkshire Brick Co. Ltd., announce a net profit after deduction of tax, for the year ended March 31, of £49,415. This shows an increase of £4,788 on the results of the previous year and a dividend of 7½ per cent on the Ordinary shares, has been declared.

We regret to record the death of Mr. C. Royston Chambers, the chairman and managing director of Gaskell & Chambers Ltd.

St. Cuthberts Way, recently opened by Dame Evelyn Sharp, D.B.E., the Permanent Secretary to the Ministry of Housing and Local Government, connects the Great North Road with the new town of Newton Aycliffe, Co. Durham. The railway bridge was designed by G. A. Goldstraw, Chief Architect to the Aycliffe Development Corporation. It is formed with mass concrete abutments 50ft apart, supporting three all welded steel plate girders, the rail track being carried on cross girders embedded in flat concrete deck. The mass concrete substructure has surfaces power-hammered to expose York stone aggregate ; the steel girders are painted blue-grey



NEW PRODUCTS

Some new items of interest on view at the Public Works and Municipal Services Exhibition

THE Public Works and Municipal Services Congress and Exhibition is to be opened by The Rt. Hon. Duncan Sandys, M.P., Minister of Housing and Local Government, on Monday, November 12, at 2.30 p.m. For details of the Congress programme see A. & B.N. October 11, 1956.

A considerable number of new products are being introduced at the Exhibition with the emphasis mainly on Contractors' plant and equipment. The trend is towards larger and more powerful machines than were shown two years ago when the Exhibition was last held. Many manufacturers, however, have concentrated on improving the design, reliability and general performance of their established models.

Blackwood Hodge are showing the new Euclid T.C.-12 twin crawler tractor. It incorporates two 194 h.p. diesel engines with separate torqmatic drive to each track. It is claimed to be the most powerful tractor built today with a top speed of 8.3 m.p.h. It is completely new in design and each half of the tractor, not just the tracks, can move up or down to maintain better ground contact.

John Blackwood Hodge & Co. Ltd., 25 Berkeley Square, London, W.1. Mayfair 9090. Stand no. 73.

★

The B.H.C. Roof Rig provides a light independent structure which enables a scaffold hoist to be used in circumstances where scaffolding is not a practical proposition. It consists of only eight major components, each light enough for handling by one man, and can be erected or dismantled in a few minutes.

British Hoist & Crane Co. Ltd., Compton, Berks. Compton 12. Stand no. 26.

★

The latest addition to the R.B. range of excavators is the 30-RB which is a caterpillar mounted model of 1 cu yd capacity with full air control. The machine is fitted with shovel equipment of the positive twin-rope crowd type. Other equipments available for the machine are dragline, dragshovel, grabbing and lifting crane, the latter with booms up to 100ft. Shovel boom length is 20ft, dipper handle length 17ft and overall length of mounting 13ft 1in. Power unit: 96·8 h.p. diesel.

Ruston-Bucyrus Ltd., Excavator Works, Lincoln. Lincoln 640. Stand no. 74.

The 2HHCR type "Hi-Tip" Weatherill hydraulic loading shovel supersedes the 2HH model. It incorporates automatic crowding action for the scoop and is able to discharge its load into receptacles 16ft high. It has a scoop capacity of ¾ cu yd and conforms generally to the Weatherill loading shovel specification. It can travel under a headroom of 8ft 4in.

F. E. Weatherill Ltd., Tewin Road, Welwyn Garden City, Herts. Welwyn Garden 4221. Stand no. 68.

★

The Swinton sunken fire No. 652 is designed to use any standard tile surround with an opening of 16in wide and not more than 22in high. Under floor air can enter the fire base from any one of six positions. The fire is at hearth level to allow maximum radiation of heat into the room and the damper control lever is at floor level. It is claimed that the steel ashpan needs emptying only once a week and the bottom grate and carrier frame can be removed without disturbing the firebricks.

Hattersley Bros. Ltd., Queen's Foundry, Swinton, Mexborough, Yorks. Mexborough 2332. Stand no. 265.

★

The Brayloader 430 is a new four-wheel drive front-end shovel with a 1 cu yd capacity bucket and a safe working load of 25cwt. The shovel is of the power crowd type and many additional attachments are available.

W. E. Bray & Co. Ltd., Faggs Road, Feltham, Middx. Feltham 3471. Stand no. 72.

★

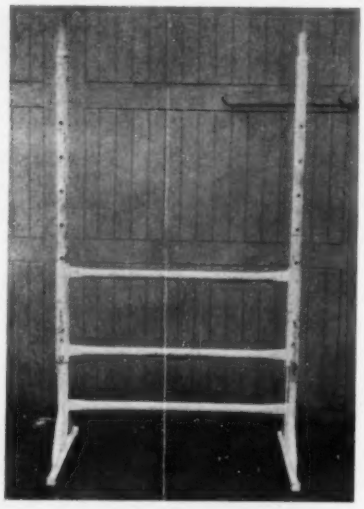
The 3-S 1 cu yd dumper is the latest addition to the Muir-Hill range. It is powered by a 12 h.p. diesel engine and has three forward speeds and one reverse, with a maximum speed of 18 m.p.h. The struck capacity is 19 cu ft and the body lip height is 3ft 4in. Also on this stand are two new machines, the 10 B 3 cu yd hydraulic dumper and the 2 WL hydraulic loader with controlled bucket roll back.

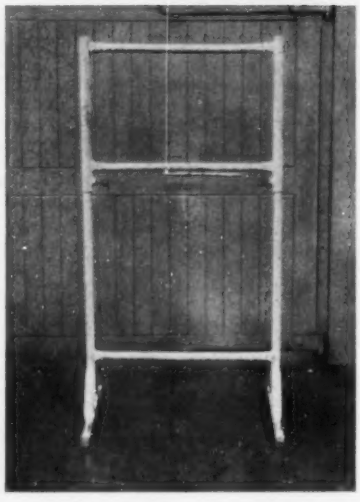
E. Boydell & Co. Ltd., Elsinore Road, Old Trafford, Manchester 16. Trafford Park 1641. Stand no. 115.

★

The Chaseside-Hopto backhoe and swing shovel is fully hydraulic in operation and designed for lorry mounting. The digging arm has a 200 deg. lateral swing. As a backhoe it will dig to a depth of 11½ft and load to 9½ft and as a shovel it will dig to the same depth and load to 11ft. The arm reach is 16½ft from centre of swing post. The cab is fully enclosed.

Chaseside Engineering Co. Ltd., Station Road, Hertford. Hertford 3113. Stand no. 43.





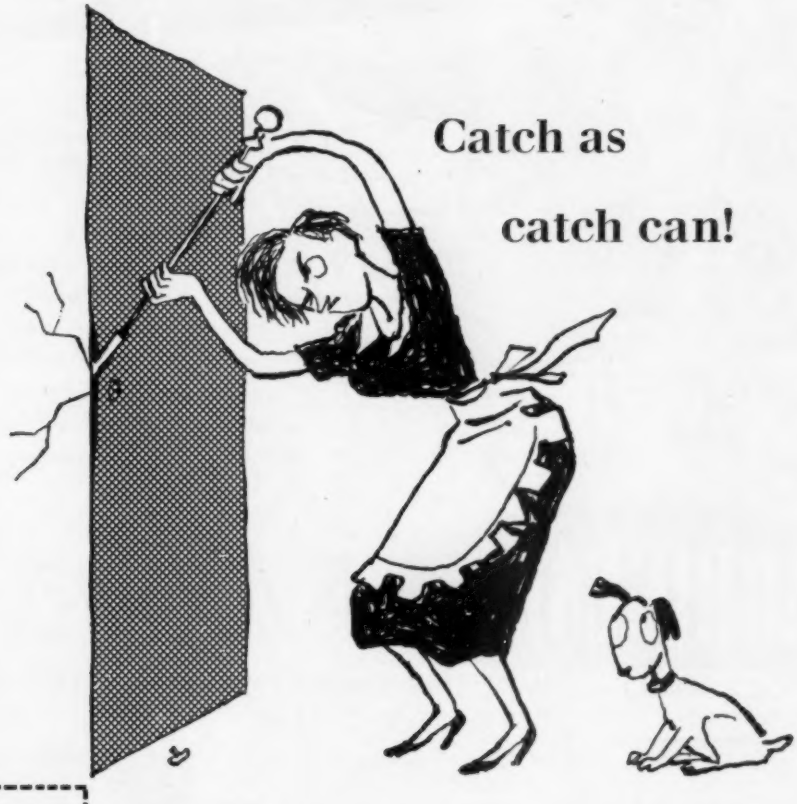
Above: The Kwikform large rising trestle, and below: The small rising trestle

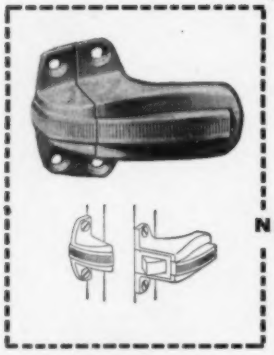
★

The Hymatic Hydrovane 60 P 100 is a compact mobile air compressor that will work concrete breakers, impact wrenches, riveting hammers and most other heavy tools. It has no valves or reciprocating parts and will maintain a free air delivery of 48 c.f.m. at 100 p.s.i. The power unit is an air-cooled petrol engine. The machine weighs 576lb.

The Hymatic Engineering Co. Ltd., Redditch, Worcestershire. Redditch 743. Stand no. 246.

Catch as catch can!





Yes, she's caught all right—on the wrong side of the larder door. But what's the good of relying on a cupboard catch that catches the user as well as the door? When this happens it's time to show a little cupboard love and fit a neat positive-acting Yale catch that will permit the door to open as surely as it closes. Such as this one:

NEW! THE YALE 1506 CUPBOARD CATCH

There's no turning or fumbling with this compact and sturdy self-closing catch. To release the bolt, simply apply thumb pressure to the trigger. Handle projects only $1\frac{3}{8}$" from door. Supplied in various finishes, or in two-colour combinations. Details and prices on request.

Where there's a door there's a need for

YALE
REGISTERED TRADE MARK

LOCKS
DOOR CLOSERS
DOOR FURNITURE
MASTER-KEYED SUITES

The Yale and Towne Manufacturing Company · British Lock and Hardware Division · Willenhall · Staffs · England

PAINT'S NO PROBLEM—

— because we specify Hangers Fabriguard Emulso-Plastic Paint for walls and ceilings — old or new — of plaster, concrete, brickwork, or asbestos cement. We use it for safety on new work and speed of two coat work. We know of no better Emulsion Paint.

For wood and metal we specify Hangers Floralac Alkyd Hard Gloss Paint — interior and exterior. It is amazingly durable and resists steam, moisture and sea air.

And the Hangers service is personal and effective.

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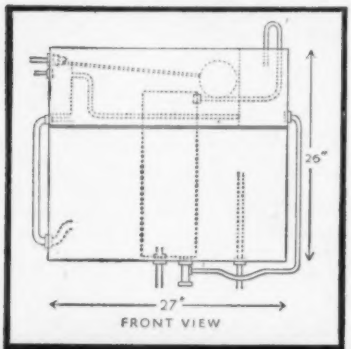
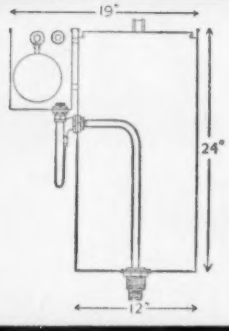
HANGERS PAINTS LTD. HULL . LONDON . BIRMINGHAM . GLASGOW . TORQUAY & NORWICH



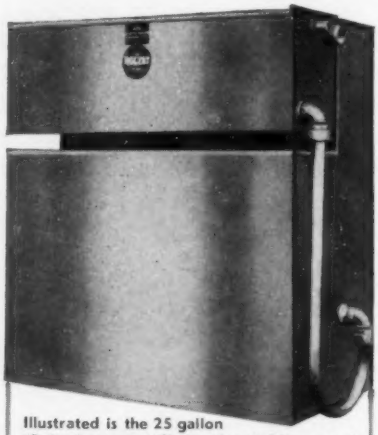
THE CALORIFIER



THE DURHAM

A BIG saving on installation costs

Rolyat tanks represent a saving all along the line, quite apart from the extra quality which is built into them. Special tanks are made for awkward situations at no extra cost, and an advisory service is at your command for any installation. They are specified by local authorities, Architects and Heating Engineers throughout the country.



Illustrated is the 25 gallon "Rolyat" recessed "Durham" tank. Please send me details of the range of "Rolyat" tanks.

NAME _____

ADDRESS _____

_____ A/1

ROLYAT TANKS

PATENT HOT WATER

THE ROLYAT TANK CO. LTD. CROMWELL RD. YORK

Corrosion-resistant sectional tanks in glass fibre reinforced plastic, for water and other liquids, are being shown by Microcell Ltd. The glass fibre panel is approximately one-third the weight of its steel counterpart. It is claimed that this type of tank is unaffected by extremes of temperature and is resistant to dilute acids, alkalis, most organic solvents, solutions of salts, hydrocarbons, oil and petrol.

Microcell Ltd., 56 Kingsway, London, W.C.2. Chancery 3424. Stand no. 304.

★

The Alcon 4in lightweight self-priming centrifugal pump is fitted with a 6 h.p. air-cooled diesel engine and can pump water containing solids up to ⅜in dia. It weighs 660lbs including trolley and has an output of 21,500 galls per hr.

Arthur Lyon & Co. (Engineers) Ltd., 6 Carlos Place, Grosvenor Square, London, W.1. Hyde Park 9141. Stand no. 192.

★

Blaw Knox again show a number of new products. The PF-90 bituminous paver finisher will lay all types, sizes and specifications of hot or cold premixed material to thicknesses of up to 10in. Widths of pavement which can be laid are from 8 to 13ft in 6in increments. The Adjusta-Wate Moto-mixer will mount on to a four-wheel chassis. It has a mixing capacity of 3½ cu yd and agitating capacity of 5 cu yd. The BK-Super-12 motor grader may be converted, with the aid of a 25ft elevating grader attachment, into a high capacity, heavy-duty earth mover. The Cleanline Rex concrete mixers are another feature.

Blaw Knox Ltd., 90-94 Brompton Road, London, S.W.3. Kensington 5151. Stand no. 113.

★

It is claimed that the Cobra motor drill is the lightest on world markets for it weighs 53lb and will drill to a depth of 13ft. It is powered by a 1 cylinder two-stroke gasoline motor. A no-float carburettor permits drilling in most positions, downwards, horizontally and at 45 deg incline. Overall drilling rate is 26ft per hour at a fuel consumption rate of 75 to 100ft per Imp. gall.

Atlas Copco (Great Britain) Ltd., Beresford Avenue, Wembley, Middx. Wembley 4426. Stand no. 162.

★

The Geopi drag winch and loading skip has been designed to assist in the loading of jet conveyors. It is claimed that two men with a drag winch and a jet conveyor can move upwards of 20 tons of sand a distance of 60 feet in an hour. Available with petrol engine or electric motor.

George Pike Ltd., Alma Street, Birmingham, 6. Aston Cross 2101. Stand no. 47.

★

R. H. Neal & Co. are exhibiting their latest mobile cranes including QMW which is a 6-ton fully mobile model and for the first time, type NMS-3-ton capacity, lorry mounted model.

R. H. Neal & Co. Ltd., Plant House, Ealing, London, W.5. Ealing 3171. Stand no. 44.

★

The chief claims for the new Winget 10 NT non-tilt mixer are that it gives efficient mixing at water/cement ratios down to 0.35 and accurate batch weighing of aggregates. The steel drum, with its deep pressed ends welded to a narrow wrapper plate, contains combined lifting bucket and blades that ensure a rapid and thorough mix. Charging is effected by power-operated pivot type loader and water is supplied from a self-measuring tank. It can be fitted with an A.B. mixer-drive shovel. Independent of the mixer driver, this shovel is thumb-button controlled by the operator. Winget are also showing the new G.F. ¾-ton dumper which has a pivoted forecarriage with a 35 deg slew to left and right. It will turn in a 6ft 6in radius. Capacities are 16 cu ft. struck and 18 cu ft heaped.

Winget Ltd., Rochester, Kent. Strood 7276. Stand no. 53.

★

Remington Rand are showing a 1/12 scale model of the Univac Electronic Computor. Each unit of the display piece is mounted on a plastic base around which are eight telephone receivers. When an enquirer wants to know more about the machine he has only to pick up a receiver and listen to a recorded explanation. The Ultravox dictating machine is also on show for the first time.

Remington Rand Ltd., 1-19 New Oxford Street, London, W.C.1. Chancery 8888. Stand no. 245.

★

The B.S.A. 98cc. (Model B) power unit has an aircooled, four-stroke engine—a single cylinder side valve unit—and can be used for a wide variety of devices such as trucks, elevators, hoists, conveyors, portable generators, etc. It weighs 40lb and using petrol as a fuel, it develops 1.5 b.h.p. at 3,000 r.p.m. Will also operate on vaporizing oil and power paraffin.

B.S.A. Motor Cycles Ltd., Power Unit Division, Birmingham 11. Victoria 2381. Stand no. 194.

★

Two new trestles have been added to the Kwikform range. The small rising trestle gives a platform 2ft 4in wide which can be varied in height between 11in and 6ft. The large rising trestle gives a platform 3ft 3in. wide and is variable in height between 11in and 6ft 5½in. By using an extension the latter can be given additional height of 3ft 9in. Also on show is the Beam clamp which has been designed to speed up shuttering on beams of all sizes and to eliminate wasteful use of timber for supporting sides and soffit shutters.

Kwikform Ltd., Waterloo Road,

Left: The B.H.C. Roof Rig and "Saga Junior" Scaffold hoist. Right: The Blaw-Knox Adjusta-Wate Moto-Mixer

New Products (continued)

Birmingham 25. *Acocks Green* 1152. *Stand no.* 56.

★

The J.C.B. Faceshovel excavator is tractor mounted and is claimed to be fast of movement and easy to manœuvre. Shovel capacity is 7 cu ft which can be raised and tipped in 30 seconds. Loading height is 10ft 6in and outreach 16ft.

J. C. Bamford (Excavators) Ltd., Lakeside Works, Rocester, Uttoxeter. Rocester 371. *Stand no.* 62.

★

It is claimed that a 20-ft tower can be erected in three minutes by using Mills' new self-lock scaffold system. The frames just slot into each other and there are no fastenings of any kind. The towers are joined together by tie bars and it is possible to erect a 20ft by 15ft section of scaffolding in eight and a half minutes.

Mills Scaffold Co. Ltd., Trussley Works, Hammersmith Grove, London, W.6. Riverside 3011. *Stand no.* 62A.

★

The Platypus Mark II Bulloader is a fully tracked overloading shovel with a bucket capacity of ¾ cu yd struck and 1 cu yd heaped. It pivots through 90deg and will dig 9in below ground. Maximum dumping height is 8ft 6in and bucket width is 6ft 1½in. Powered by a 34 b.h.p. diesel, the machine has a maximum forward speed of 4.9 m.p.h.

Rotary Hoes Ltd., West Horndon, Essex. Herongate 361. *Stand no.* 308.

★

The David Brown Group of Companies are showing several new machines. A new, light industrial, wheeled tractor is available with petrol engine (top speed 23.4 m.p.h.) or diesel (top speed 18.25 m.p.h.). The 50 TD diesel track-layer which is designed to supersede the 50 ITD. The main improvements are in the final drive and track assembly. A new overshot loader has a bucket capacity of 1 cu yd and is powered by a 50 h.p. diesel engine. It is fully hydraulic and will fill and empty at the rate of 25secs per load. The 2D stationary engine is a 13 h.p. diesel unit with low fuel consumption.

David Brown Industries Ltd., Hanworth Park, Feltham, Middx. Feltham 4282. *Stand no.* 142.

★

Philplug are introducing Impregnated Gel Grummet which is claimed to be an improved method of waterproofing bolts used in tunnel segments, etc. The Studbolt is a machine designed for machine fixings also inserts and cast-in threads for precasting into concrete or artificial stone.

Philplug Products, 343 *High Road, Wembley, Middx. Wembley* 2255. *Stand no.* 267.

★

Compactors Engineering are showing an internal vibrator which is powered by an internal combustion engine. It weighs less than 30lb and has a frequency of 12,000 r.p.m.

Compactors Engineering Ltd., 65 *Effra Road, London, S.W.*2. *Brixton* 4081. *Stand no.* 289.

★

A representative range of the new Acrow-clamp tubular fitting is being shown as applied to pedestrian guard rails, tubular barriers and storage rack constructions. The design of the fitting permits easy modification of structures and removal of any tubular member without disturbing the main structure, it is claimed.

*Acrow (Engineers) Ltd., South Wharf, London, W.*2. *Ambassador* 3456. *Stand no.* 177.

★

Sealocrete Patching mortar is a new product whose primary application is in concrete work.

*Sealocrete Products Ltd., Atlantic Works, Hythe Road, London, N.W.*10. *Ladbroke* 0015. *Stand no.* 98.

★

The "H" Type breaker is claimed to be the most powerful portable electric hammer in the world. Primarily for heavy duty concrete and road breaking, it is operated either from normal mains supply or a small portable generating set.

*Kango Electric Hammers Ltd., Lombard Road, London, S.W.*19. *Liberty* 4253. *Stand no.* 92.

★

A portion of the Ruberoid Stand is roofed with insulated metal roofing, using the recently introduced types "D", "E" and "F" galvanised steel deck.

The Ruberoid Co. Ltd., 1-19 *New Oxford Street, London, W.C.*1. *Holborn* 8797. *Stand no.* 189.

★

Chamberlin Weatherstrips are showing "Cushion Bronze" which is a permanent draught seal for metal windows and the Insulate slide window which is designed to provide freedom from draughts and heat and sound insulation.

Chamberlin Weatherstrips Ltd., 436 *Hook Road, Chessington, Surrey. Lower Hook* 1181. *Stand no* 196.

★

Warsop Power Tools are showing a new 4in self-priming diaphragm pump powered by a Lister LD diesel engine. A geared oil pump operates hydraulically a double acting ram which is connected to the diaphragm whilst a relief valve enables the engine to be started free of any pumping load. Maximum performance figures are:—suction lift, 25ft; total head, 40ft; free flow output, 5,000 g.p.h.

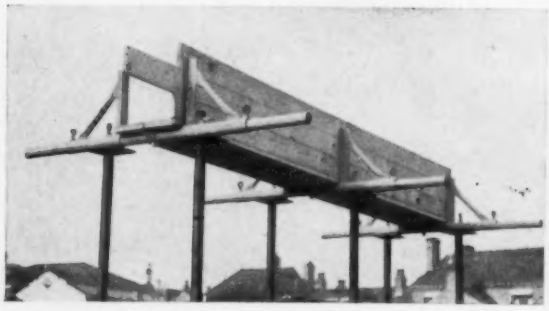
Warsop Power Tools Ltd., 27 *Regent Street, London, S.W.*1. *Regent* 4632. *Stand no.* 22.

★

Climax are showing the deep hole Vole drill. It has the hammer attached to the bottom of hollow feed tubes and it is therefore always in immediate contact with the rock. Drilling speed at depth is claimed to be the same as at the surface. The D.30A portable compressor is powered by a Ford 36 h.p. diesel and has an output of 120 cu ft/min. at 100lb/sq in.

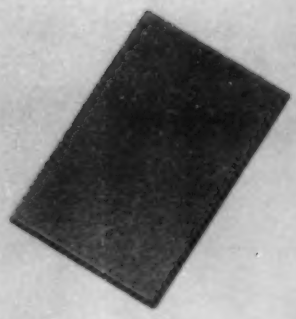
Climax Rock Drill & Engineering Works Ltd., Carn Brea, Redruth, Cornwall. Camborne 2261. *Stand no.* 32.

Left: The Kwikform Beam Clamp. Right: Glass fibre reinforced plastic tank by Microcell Ltd.

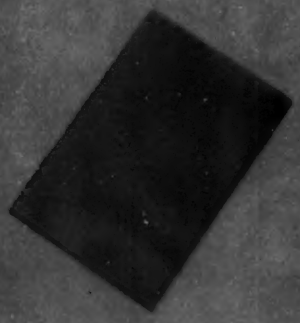


YEOMAN LIGHT RED 6¼" × 13"
approx. weight of tiling 1000 lbs. per sq.

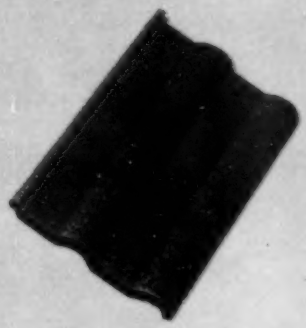
LUDLOW ANTIQUE · 15" × 9"
approx. weight of tiling 900 lbs. per sq.



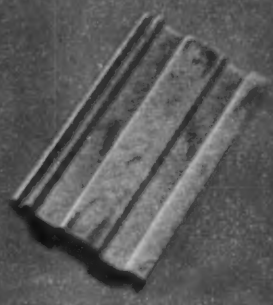
PLAIN FULL GREEN · 10½" × 6½"
approx. weight of tiling 2000 lbs. per sq.



PLAIN DARK RED · 10½" × 6½"
approx. weight of tiling 2000 lbs. per sq.



YEOMAN BROWNSTONE · 16½" × 13"
approx. weight of tiling 1000 lbs. per sq.



LUDLOW COTSWOLD GREY · 15" × 9"
approx. weight of tiling 900 lbs. per sq.

MARLEY offer the widest selection of roof tiles in the world in five main types — PLAIN TILES, ANGLIA, YEOMAN, LUDLOW and WESTWOLD.

All Marley Roof Tiles are covered by the Marley dual guarantee:
A. That Marley Tiles will not laminate or decay for 50 years.
B. When fixed by Marley craftsmen, they will be maintained free for 10 years.

MARLEY

"Not for an age—but for all time"

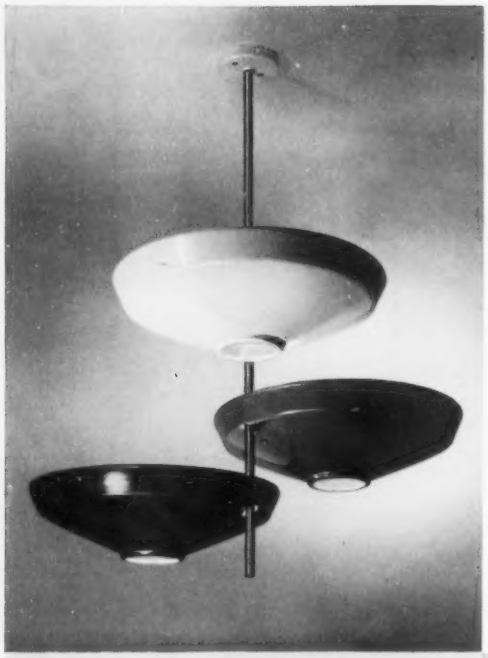
The Marley Tile Company Ltd. Sevenoaks, Kent. Sevenoaks 55255.

WESTWOLD SEA GREEN · 10½" × 6½"
approx. weight of tiling 2000 lbs. per sq.

ANGLIA BRICK RED · 15" × 9"
approx. weight of tiling 900 lbs. per sq.

ANGLIA DARK GREEN · 15" × 9"
approx. weight of tiling 900 lbs. per sq.

All weights are based on normal gauge for the type of tiling mentioned



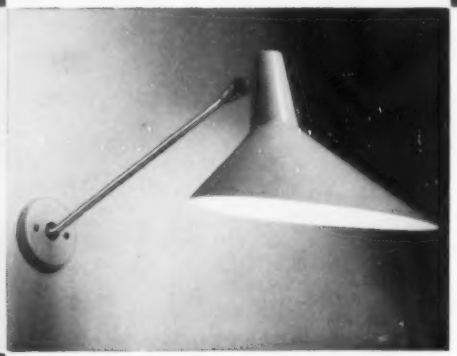
Additions to the current range of Troughton & Young fittings are now complete to supplement the existing designs in the Mondolite, Versalite, and Ultralux ranges.

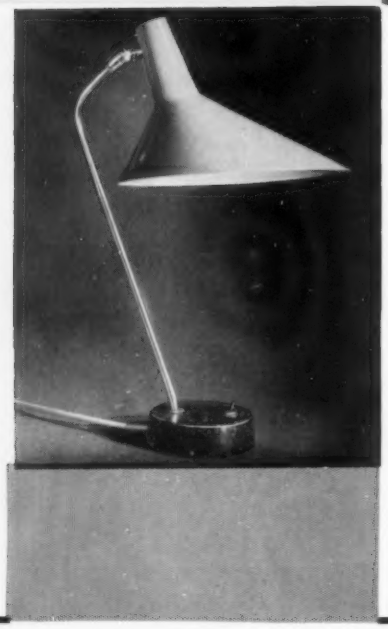
Many of these new fittings, in pendant, bracket, table lamp and floor standard form, have been designed with new materials and the emphasis is on colour, simplicity of design, and interchangeability of units to provide a variety of alternative assemblies.

The majority of these fittings have already been approved by the Council of Industrial Design for "Design Review", and an attractive display of the new units has been added to the Lighting Centre at Knightsbridge and our Liverpool showroom.

An illustrated folder of these new fittings Ref. No. TYL/11 is available on request.

new range of lighting fittings...

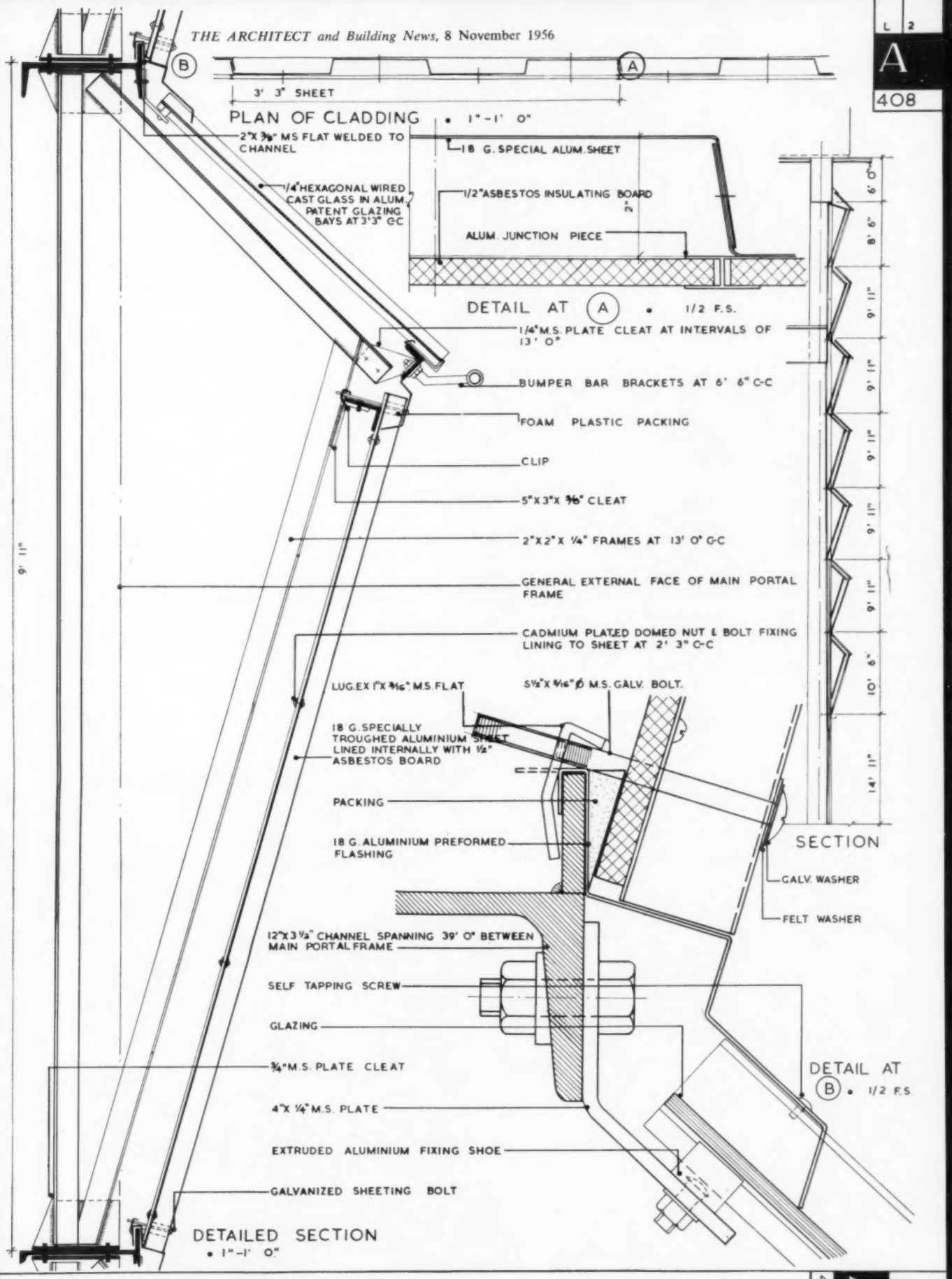




TROUGHTON & YOUNG

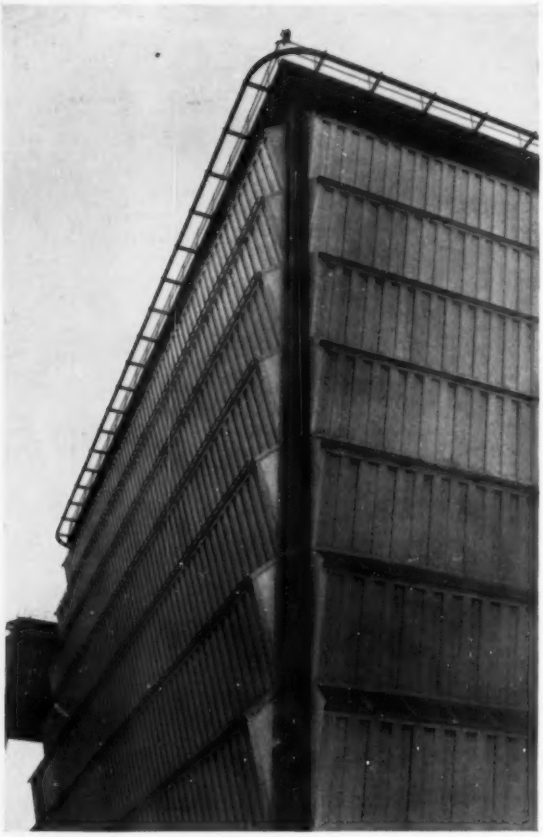
TROUGHTON & YOUNG (LIGHTING) LTD.,
143 Knightsbridge, London, S.W.1 'Phone: KENsington 3444
Also at 46, Rodney Street, Liverpool, 1.

RFW.12.


B
A
3' 3" SHEET
PLAN OF CLADDING • 1"-1' 0"
2"X 3/16" MS FLAT WELDED TO CHANNEL
1/4" HEXAGONAL WIRED CAST GLASS IN ALUM. PATENT GLAZING BAYS AT 3'3" C-C
18 G. SPECIAL ALUM. SHEET
1/2" ASBESTOS INSULATING BOARD
ALUM. JUNCTION PIECE
DETAIL AT (A) • 1/2 F.S.
1/4" M.S. PLATE CLEAT AT INTERVALS OF 13' 0"
BUMPER BAR BRACKETS AT 6' 6" C-C
FOAM PLASTIC PACKING
CLIP
5"X 3"X 3/16" CLEAT
2"X 2" X 1/4" FRAMES AT 13' 0" C-C
GENERAL EXTERNAL FACE OF MAIN PORTAL FRAME
CADMIUM PLATED DOMED NUT & BOLT FIXING LINING TO SHEET AT 2' 3" C-C
LUG EX 1"X 3/16" M.S. FLAT
5 1/2"X 5/16" Ø M.S. GALV. BOLT.
18 G. SPECIALLY TROUGHED ALUMINIUM SHEET LINED INTERNALLY WITH 1/2" ASBESTOS BOARD
PACKING
18 G. ALUMINIUM PREFORMED FLASHING
SECTION
GALV. WASHER
FELT WASHER
12"X 3 1/2" CHANNEL SPANNING 39' 0" BETWEEN MAIN PORTAL FRAME
SELF TAPPING SCREW
GLAZING
3/4" M.S. PLATE CLEAT
4"X 1/4" M.S. PLATE
EXTRUDED ALUMINIUM FIXING SHOE
GALVANIZED SHEETING BOLT
DETAIL AT (B) • 1/2 F.S.
9' 11"
6' 0"
8' 6"
9' 11"
9' 11"
9' 11"
9' 11"
9' 11"
10' 6"
14' 11"

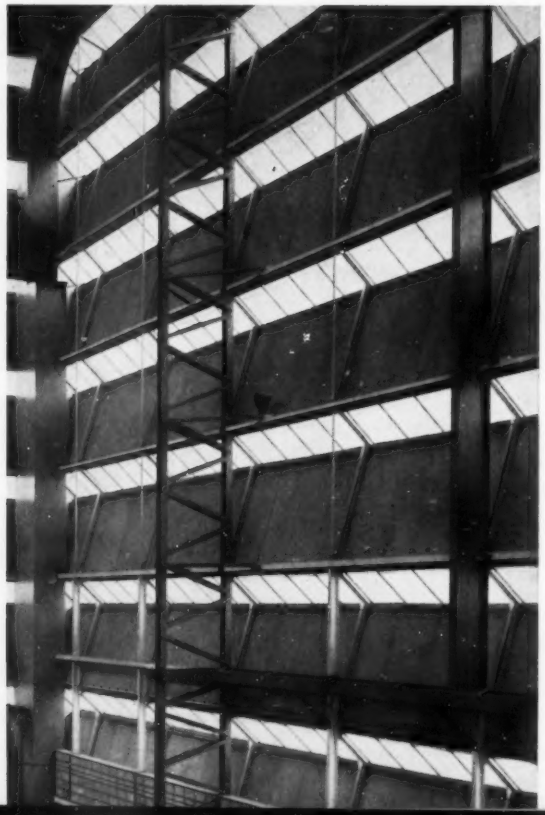
DETAILED SECTION
• 1"-1' 0"

WALL DETAIL. GENERATING STATION. MARCHWOOD. • FARMER & DARK



WALL DETAIL,
GENERATING STATION,
MARCHWOOD

ARCHITECTS: FARMER & DARK



ELECTRICITY IN SCHOOLS

ELECTRIC LIGHTING

School lighting must provide really good seeing conditions for children and staff for the minimum possible cost, while conforming to current authoritative codes of practice: the lowest permitted levels of lighting (which are mandatory) are specified in the Standards for School Premises Regulations 1954, of the Ministry of Education.

Lighting Requirements

There are two dominant aspects of electric lighting which are controlled by the Standards for School Premises Regulations and which are also the subject of recommendations by the Code of the Illuminating Engineering Society (the I.E.S. Code). These are, the level of illumination to be provided and the maximum permissible brightness of any part of a lighting fitting, or its reflected image that may come within the normal field of view: the former is given in Table 1, the latter is as follows:

"In all teaching accommodation no luminous part of any lighting unit, or mirrored image thereof, having a maximum brightness greater than 1,500 foot-lamberts or an average brightness greater than 1,000 foot-lamberts, shall be visible to any occupant in a normal position within an angle at the eye of 135° from the perpendicular from the eye to the floor."

The 1948 British Standard Code of Practice on school lighting being in process of revision, architects should base their plans for lighting on the I.E.S. Code wherever possible. It must be pointed out, however, that this Code is in conflict with the Ministry of Education requirements on maximum permissible brightness. A strict reading of the latter would seem to rule out the use of open shades for filament lamps when liable to give rise to mirrored images, and to eliminate fluorescent lamps unless mounted in a fitting which conforms with the M.O.E. requirements.

Selection of Lamps

Their high efficiency, low brightness and freedom from hard shadows, put fluorescent lamps technically in the forefront for school lighting, but where capital outlay is severely controlled, as is so often the case in this class of building, their use must be justified on cost as well as on performance. The new Warm White fluorescent lamps, which are the most efficient, give three times the lighting service for the same cost of electricity as equivalent filament lamps, and lamp renewal cost is almost identical since their light output is maintained at its standard level for five times as long.

Running Costs

The saving in running cost (i.e. of electricity consumed and lamps replaced) of a fluorescent lamp over a filament lamp providing the same light output, approximates very closely to that given by the formula:

$$\text{Annual saving in pence} = \frac{W_f \times H \times C}{500}$$

where

W_f = Fluorescent lamp wattage (including gear losses)
H = Hours of use per annum
C = Cost of electricity per unit in pence.

TABLE 1 ILLUMINATION REQUIREMENTS

	I.E.S. Code	M.O.E. minimum standards
Dressing rooms, Toilet and Wash rooms	7 lm./sq. ft.	
Assembly and Dining halls, Theatres, Gymnasia, Libraries	10 ,,	10 lm./sq. ft.
Classrooms, Laboratories, Kitchens, Staff rooms	15 ,,	
Art, Craft, and Sewing rooms	20 ,,	
Manual Training rooms and Workshops	Follow industrial practice	

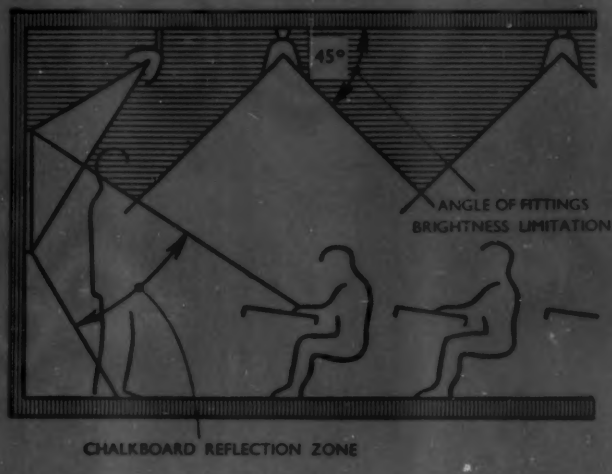


Fig. 1 Classroom lighting

LS.1

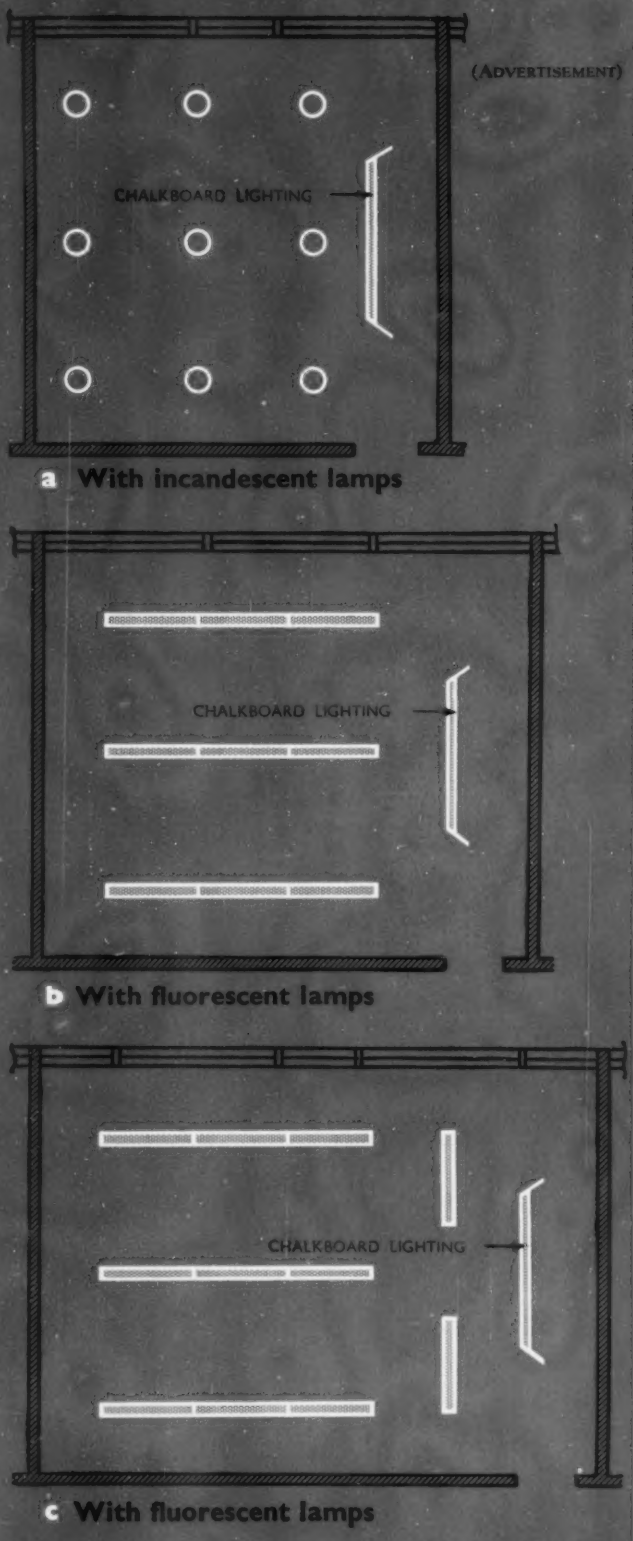


Fig. 2 Typical lighting layouts for classrooms of different areas and proportions

For example, one 80 watt fluorescent lamp (consuming 100 watts with gear losses) with electricity at 2d. per unit and 500 hours annual use, will save

$$\frac{100 \times 500 \times 2}{500} = 16\text{s. } 8\text{d. per annum, or } £1.13.4\text{d.}$$

per annum for 1,000 hours' use, the saving being directly proportional to the annual hours of use and the unit cost of electricity. This saving should be set against the additional capital cost due to each fluorescent fitting, or against its annual amortization charge.

From the above it will be clear that the use of fluorescent lamps is particularly economical in those parts of the building used beyond normal day school hours : in other cases their technical advantages may well outweigh their higher capital cost, e.g. in kitchens, art and craft rooms, and workshops where their superior lighting characteristics are particularly desirable.

Classroom Lighting

Since an even distribution of light is required over the whole of the working area, the lighting arrangement for classrooms tends to follow a symmetrical pattern with slight modifications necessitated by different shapes and areas of room. Owing to the general tendency towards lower ceilings in order to reduce cost, nine lighting fittings are necessary over the desk area in a normal classroom in place of the six formerly used at a greater mounting height. In a classroom of 400 sq. ft. this layout (Fig. 2a) will provide the bare M.O.E. minimum of 10 lumens/sq. ft. if 100 watt lamps are used : it is, however, preferable to use 150 watt lamps when the illumination obtained will be of the order of 15 lumens/sq. ft. which is the recommended value in the I.E.S. Code.

Nine 150 watt filament lamps will also satisfy the minimum requirements for a 480 sq. ft. classroom, but if a higher level of illumination is required it will be necessary to add another row of fittings since even distribution of light is essential, and more powerful filament lamps are unsuitable.

The efficiency of fluorescent lamps has now been improved to the stage when a 4 ft., 40 watt lamp gives slightly more light than a 150 watt filament lamp, in consequence of which, 40 watt fluorescent lamps may be used with advantage instead of filament lamps.

The arrangement shown in Fig. 2b makes a very simple and inexpensive installation since only one ceiling outlet is required for each row of lamps, the wiring being looped to the remaining fittings. For larger rooms the arrangement shown in Fig. 2c is recommended.

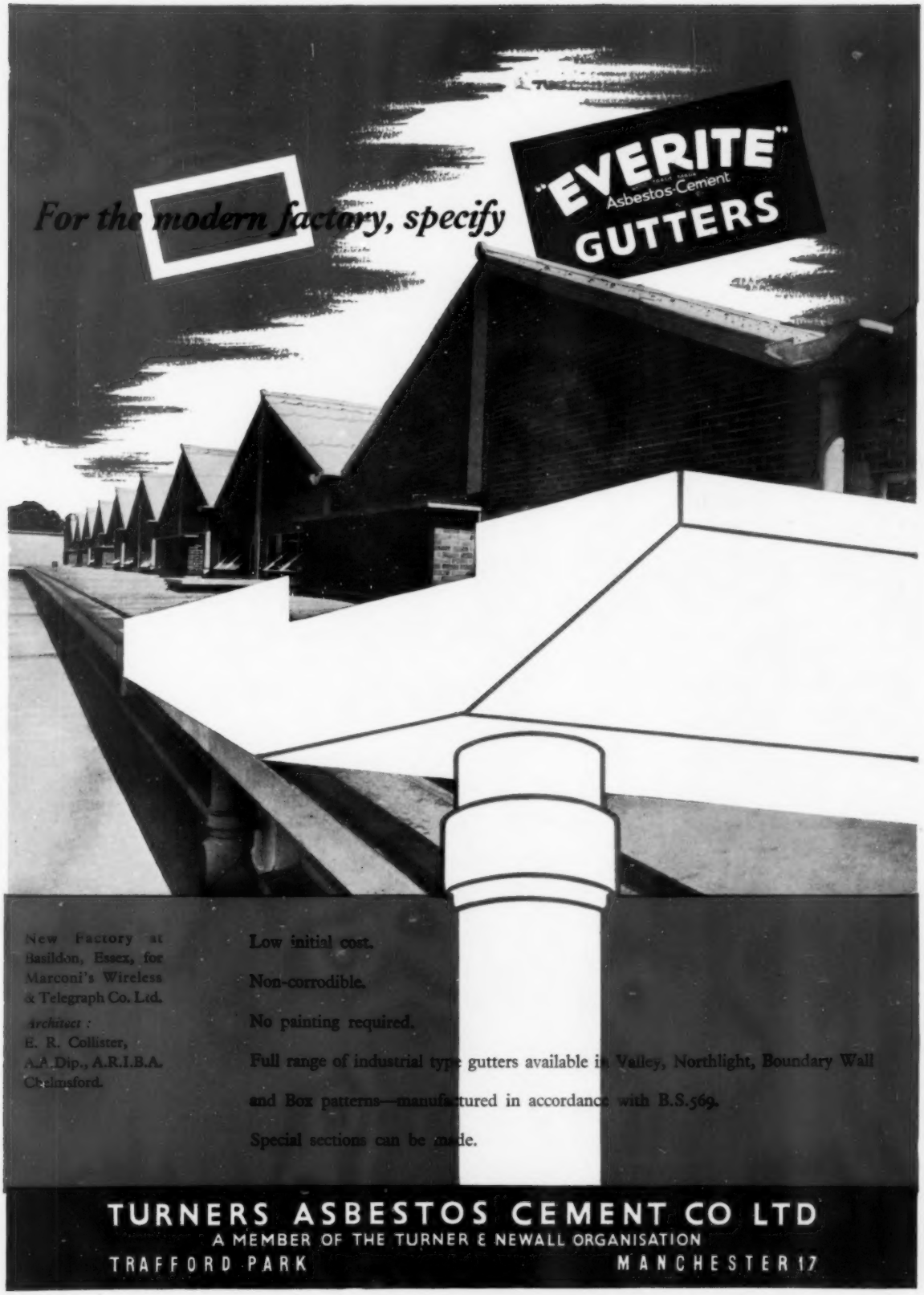
Chalkboard Lighting

All chalkboards should be separately lighted by carefully placed angle fittings mounted to avoid reflections at any part of the desk area (Fig. 1). Fluorescent lighting is preferable for this purpose even if filament lamps are used elsewhere, and sufficient 40 watt 4 ft. lamps should be used in a suitable fitting to cover the full length of the chalkboard.

For further information on the use of electricity apply to:

LS.1 **British Electrical Development Association**

2 Savoy Hill, London, W.C.2. Temple Bar 9434.



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CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in a bold type. References indicate : (a) type of work (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading (c) deposit (d) last date of application (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.

OPEN

BUILDING

ALDRIDGE U.C. (a) 32 flats and 8 bungalows at Pelsall Wood estate. (b) Council's Engineer, The Poplars, 9 Leighwood Road, Aldridge, Staffs. (c) 2gns. (e) December 5.

AMPTHILL R.C. (a) (1) Three pairs of houses and a block of three houses together with a block of four garages; (2) three pairs houses and two blocks of three houses, at Harlington; (3) four pairs houses and two blocks of three houses; and (4) four pairs houses and four blocks of three houses at Aspley Guise. (b) Council's Engineer, 12 Dunstable Street. (c) 2gns per set. (e) December 8.

BEDFORDSHIRE C.C. (a) Proposed works of extension to the Laundry at The Limes, Biggleswade. (b) County Architect, Shire Hall. (d) November 10.

BRADFORD C.C. (a) Erection of Rhodesway secondary school. (b) Scherrer and Hicks, 19 Cavendish Square, London, W.1. (d) November 13. (e) February 4.

BRAINTREE AND BOCKING U.C. (a) Contract No. 8. Erection and completion of 27 houses, 5 garages and 27 outbuildings at Challis Lane estate. (b) Council's Engineer, Town Hall. (c) 2gns. (e) November 19.

BUCKS C.C. (a) Erection of Farnham Royal secondary school, estimated to cost approx. £150,000, and to be completed within 15 months. The date of commencement will be March, 1957. (b) Council's Clerk, County Hall, Aylesbury, with an assurance that applicant has the resources, in the light of commitments, to carry out the work in the time stated, and, in particular, that suitable labour is available, by importation or otherwise. (d) November 17.

BUCKS C.C. (a) New secondary technical school in Northampton Avenue, demolition of existing buildings on the William Street school site and erection of the remaining phases of the College of Further Education. The estimated cost of this project is in the region of £750,000. The secondary technical school to be completed within 15 months and the whole project to be completed in three years. Date of commencement for the combined contract will be March, 1957. (b) Council's Clerk, County Hall. Aylesbury, with an assurance that applicant has the resources, in the light of commitments, to carry out the work in the time stated, and, in particular, that suitable labour is available, by importation or otherwise. (d) November 17.

CARMARTHENSHIRE C.C. (a) Erection and completion of an ambulance station at Abergwili, near Carmarthen. (b) County Architect, County Hall. (c) 2gns. (d) November 15. (e) December 15.

CHORLEY B.C. (a) Contract No. 1: 38 houses and 8 flats; and Contract No. 2 : 43 houses, at Cowling site. (b) Borough Engineer, Council Offices. (c) 3gns. (e) November 27.

CROYDON B.C. (a) 16 dwellings units in a three-storey block and four houses at Greenside Road. (b) Borough Engineer, Town Hall. (e) December 7.

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DEVON C.C. (a) Erection of classroom, offices, cloaks, drainage, etc., at East Bridgerule primary school. (b) County Architect, 97 Heavitree Road, Exeter. (c) 2gns by cheque, payable to Council. (d) November 12.

DONCASTER R.C. (a) Four brick built cottage flats at Bank End Road, Blaxton, and appurtenant works in connection therewith. (b) Council's Surveyor, Nethel Hall. (e) November 23.

DURHAM C.C. (a) Proposed canteen, scullery and additional cloakrooms, etc., at Esh Winning school, and one police house with office at Washington. (b) County Architect, South Street. (d) November 14.

EAST ANGLIAN REGIONAL HOSPITAL BOARD. (a) Applications for inclusion in an approved list of building contractors for new works and/or alterations to existing hospital properties in the Region for works costing: (1) over £100 and up to £10,000; (2) over £10,000 and up to £25,000; (3) over £25,000 and up to £50,000; and (4) over £50,000. The area administered by the Board includes Cambridgeshire, Isle of Ely, Norfolk, Huntingdonshire, East and West Suffolk, Soke of Peterborough and parts of South Lincoln and North Essex. (b) Board's Architect, 33 Parkside, Cambridge. (d) November 10.

EASTBOURNE B.C. (a) Three-storey block of 9 flats on a site in Langney Road. (b) Borough Surveyor, 2 Saffrons Road. (c) 2gns by cheque, payable to Corporation. (d) November 12. (e) December 10.

EAST SUSSEX C.C. (a) Carrying out improvements, including kitchen and sanitary accommodation at Etchingham C.E. school. (b) County Architect, County Hall, Lewes. (d) November 12.

EAST SUSSEX C.C. (a) Erection of an assembly hall with kitchen and additional cloakroom accommodation at Mountfield and Whatlington C.E. school. (b) County Architect, County Hall, Lewes. (d) November 12.

EAST SUSSEX C.C. (a) Two additional classrooms and improved sanitary accommodation at Hurst Green C.E. school. (b) County Architect, County Hall, Lewes. (d) November 12.

EAST SUSSEX C.C. (a) Erection of East Grinstead Imberhorne secondary school. (b) County Architect, County Hall, Lewes. (d) November 12.

EIRE—DUBLIN C.C. (a) Completion of three blocks of flat dwellings at Orchard Road area. (b) City Treasurer, Exchange Buildings, Lord Edward Street, Dublin. (c) 15gns. (e) November 20.

ELLESMERE PORT B.C. (a) Contract No. 181: 14 bungalows in two blocks and ancillary works at Edward Street, Ellesmere Port. (b) Borough Engineer, Queen Street, Ellesmere Port. (c) 3gns. (e) November 26.

EASTLEIGH B.C. (a) 5 pairs of houses at Leigh Road, Chandler's Ford, together with laying a length of 6in foul sewer and construction of precast inspection chambers. (b) Borough Engineer, Town Hall, Eastleigh, Hants. (c) 2gns. (e) November 26.

FELLING U.C. (a) Carrying out the first stage of reconstruction of the Council's Depot at Abbotsford Road, comprising demolition and removal of certain old buildings, and erection of a new block of buildings for maintenance offices and stores and a new block of garages for the Health Department. (b) Council's Surveyor, Council Buildings, Felling, Gateshead, 10. (c) 2gns. (e) November 20.

FOLKESTONE B.C. (a) One block of nine flats at Lennard Road, and one block of nine flats at Harbour Way. (b) Borough Engineer, 2-10 West Terrace. (c) 2gns to Borough Treasurer, at the same address for each site. (d) November 14.

HEMEL HEMPSTEAD B.C. (a) Sports pavilion at High Street Green. (b) A. H. Turner, High Street. (e) November 19.

HOLLAND C.C. (a) Erection of science and assembly hall/gymnasium blocks at Boston grammar school. (b) County Architect, County Hall, Boston, with an assurance that contractor has the necessary financial and material resources and organization to undertake the work. (c) 2gns from firms selected to tender. (d) November 19. (e) December 17.

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IPSWICH B.C. (a) 24 single bedroom flats in blocks of 4 and 8 and bungalows in pairs. (b) Borough Engineer, 19 Tower Street. (c) 3gns by cheque. (d) November 15. (e) December 20.

KINGSWOOD U.C. (a) (1) 15 houses and 8 bungalows at Greenways and Grace Drive, Kingswood; and (2) 13 houses and five bungalows at Tudor Road/Chapel Road, Hanham. (b) Council's Clerk, Council Offices, Kingswood, Bristol. (c) 2gns each or both contracts. (e) November 19

LANCASHIRE C.C. (a) Carrying out adaptations and repairs to form occupational centre at Droylsden, Morningside, Fairfield Avenue. (b) County Architect, P.O. Box No. 26, County Hall, Preston, quoting Ref. A/MG. (c) 2gns. (d) November 12.

LANCASHIRE C.C. (a) Police house, office and garage at Hollins Green, Manchester Road, Rixton; one pair of police houses and office at Gathurst Lane, Shevington; one pair of police houses at Scholes Street, Chadderton; one pair of police houses at Park View, Abram; one pair of police houses at Platt Bridge, Neville Street, Hindley; police house, office and garage at Grange Road, Lindale-in-Cartmel; police house and office at Holme Crescent, Trawden; demolition of two cottages on site of Brookfield secondary school, Kirkby; and rebuilding and pointing boundary walls at Bacup St. Mary's R.C. school. (b) County Architect, P.O. Box No. 26, County Hall, Preston, quoting Ref. A/MG. (d) November 12.

LEEDS REGIONAL HOSPITAL BOARD. (a) Carrying out alterations and adaptations to sanitary and ward accommodation at the Convalescent Hospital, Ilkley. (b) Board's Architect, Park Parade, Harrogate. (c) 2gns. (d) November 14. (e) December 5.

LINCOLN C.C. PARTS OF KESTEVEN. (a) Alterations to classrooms and new roadway at Grantham Huntingtower Road secondary school. (b) County Architect, County Offices, Sleaford, Lincs. (e) November 26.

LONDON—ACTON B.C. (a) Carrying out alterations at the canteen in Newton Avenue. (b) Borough Engineer, Town Hall, Acton, W.3. (e) November 17.

LUTON B.C. (a) Alterations and conversion of 63 Brook Street into five flats, and erection of two pairs of houses in The Pyghtle, Farley Hill estate. (b) Borough Architect, Town Hall, Luton. (c) 2gns each contract. (e) November 29.

MALVERN U.C. (a) Erection and completion of two pairs of houses and two blocks of four houses, at Jamaica Road, and North View Avenue, Malvern Link. (b) Council's Surveyor, The Council House, Malvern. (c) 2gns. (e) November 23.

MANCHESTER CORPORATION. (a) Erection of a shelter at Heaton Park. (b) City Architect, P.O. Box 488, Town Hall, Manchester. (e) November 28.

NEWCASTLE UPON TYNE C.C. (a) Erection of a home for the more infirm on Sections "C" and "E" of the Montagu estate. (b) City Architect, 18 Cloth Market, Newcastle upon Tyne, 1, in writing. (e) November 26.

NEWCASTLE UPON TYNE C.C. (a) 72 flats and maisonettes at Kenton North estate, Group 22. (b) City Architect, 18 Cloth Market, Newcastle upon Tyne, 1, in writing. (e) November 15.

NEWMARKET U.C. (a) Five shops at Valley Way, Houldsworth Valley estate. (b) Council's Architect, Council Offices, Severals House. (c) 2gns. (e) December 5.

N. IRELAND—ARMAGH E.C. (a) Erection of scullery/servery annexe to the recently built primary school at Anamar, near Crossmaglen. (b) K. J. Kenny, 80 Hill Street, Newry. (c) £2, by cheque. (e) November 19.

N. IRELAND—CO. DOWN. (a) Erection of an extension to Sullivan Upper

school, Holywood, Co. Down. (b) Messrs. Roe Stevenson & Sons, 33 College Gardens, Belfast. (c) 5gns. (e) November 26.

N. IRELAND—FERMANAGH EDUCATION COMMITTEE. (a) Erection and completion of a new secondary school and central kitchen at Lisnaskea. (b) H. M. Jones, 27 High Street, Enniskillen, or F. H. Wright and Partners, 79 Botanic Avenue, Belfast. (c) £3, by cheque, payable to E.C. (e) November 19.

N. IRELAND—N.I. TUBERCULOSIS AUTHORITY. (a) Carrying out alterations and additions at 27 Adelaide Street, Belfast. (b) The Secretary, 27 Adelaide Street, Belfast. (c) 5gns. (e) November 23.

N. IRELAND—STRABANE R.C. (a) (1) 6 houses at Skinbuoy, Douglas Bridge; and (2) 8 houses at Lisnarrow, Donemana, Strabane. (b) Council's Clerk, Council Office, Derry Road, or W. and M. Given, 3 Richmond Street, Londonderry. (c) 3gns. (e) December 7.

NORTH RIDING EDUCATION COMMITTE. (a) Erection of Thornaby modern school, nr. Middlesbrough. (b) Johns, Slater and Haward, 32 Foundation Street, Ipswich. (e) December 7.

ROCHDALE B.C. (a) Carrying out alterations and additions at the Greenbank secondary school. (b) Borough Surveyor, Town Hall. (e) November 20.

RUISLIP—NORTHWOOD U.C. (a) 122 flats at Diamond Road and Victoria Road, South Ruislip. (b) Council's Engineer, Council Offices, Northwood, Middlesex. (c) 2gns. (e) December 3.

RUNCORN R.C. (a) Two-storey block of four shops and four flats at Cobbs Quarry estate, Appleton, nr. Warrington. (b) Council's Engineer, Council Offices, Castle Park, Frodsham, via Warrington. (c) 2gns. (e) November 27.

RUSHDEN U.C. (a) 11 bungalows at Little Street, Rushden, and 3 bungalows at Hayden Road, together with site works. (b) Council's Engineer, Council Buildings. (e) November 20.

SALFORD C.C. (a) Erection of a schools canteen at Langworthy Road. (b) City Engineer, Town Hall. (c) 2gns. (e) November 30.

SCOTLAND—FIFE MENTAL HOSPITAL BOARD. (a) 2 semi-detached houses at Stratheden Hospital, By Cupar, Fife. (b) Messrs. Mills and Shepherd, 69 Crossgate, Cupar, Fife, in writing. (e) November 30.

SCOTLAND—HAMILTON BURGH COUNCIL. (a) Several works in connection with the erection of 12 houses on five sites within the Burgh. (b) Town Clerk, Municipal Buildings, Cadzow Street. (e) November 17.

SCOTLAND—INVERNESS ROYAL BURGH COUNCIL. (a) One block of 6 flats, two blocks of 12 flats, and four blocks of 18 flats, all three storeys high, at The Bught site. (b) Burgh Architect, 11 High Street. (e) November 21.

SOUTHEND-ON-SEA B.C. (a) Construction of foundations and erection of prefabricated movable classrooms and incidental works, at Shoeburyness high school, Caulfield Road, Shoeburyness; and Southend high school for boys, Hobleythick Lane. (b) Borough Architect, 30 Alexandra Street. (c) 2gns each school. (e) December 5.

SPILSBY R.C. (a) Four houses and eight bungalows at Ancaster Avenue. (b) Council's Engineer, Council Offices, Toynton Hall. (c) 3gns, by cheque, payable to Council. (e) November 30.

TIPTON B.C. (a) 16 flats at Park Lane East. (b) Housing Architect, Municipal Buildings. (c) 3gns. (e) November 30.

WAKEFIELD C.C. (a) Erection of a messroom in Thornes Park. (b) City Engineer, Town Hall. (d) November 8. (e) November 27.

WALTON AND WEYBRIDGE U.C. (a) Two blocks of four flats in Cambridge Road. (b) Council's Engineer, Council Offices. (e) November 24.

WEYMOUTH AND MELCOMBE REGIS B.C. (a) 50 three-storey flats at Chapelhay. (b) Town Clerk, Council Offices, Weymouth, Dorset, for inclusion in a list of selected contractors. (d) November 14.

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LANGNEY, SUSSEX. (1) Erection of Bedewell C. of E. school. (2) Langney. (3) Ringmer Building Works Ltd., Ringmer, nr. Lewes. (4) £170,000.

WELSH REGIONAL HOSPITAL BOARD. (1) First stage of West Wales Hospital. (2) Glangwili, Carmarthenshire. (3) E. Turner and Sons Ltd., 31 Walter Road, Swansea. (4) £450,000.

LONG EATON U.D.C. (1) 174 dwellings. (2) Sawley. (3) F. Perks and Son Ltd., Bridge Street, Long Eaton. (4) £239,500.

BELFAST CORPORATION. (1) Girls' school. (3) Graymount. (3) Thos. McKee and Sons Ltd., Imperial Drive, Belfast. (4) £150,000.

SOUTHAMPTON. (1) Warehouse and offices for British Paints Ltd. (2) Docks. (3) Mullen and Lumsden Ltd., 151 Romsey Road, Shirley, Southampton. (4) £130,000.

BETHNAL GREEN B.C. (a) 40 flats, 10 maisonettes, etc. (2) Bonner Road. (3) Rowley Bros Ltd., Tottenham, N.17. (4) £126,500.

HAMPSTEAD B.C. (1) 40 flats, 10 maisonettes, 18 shops. (2) Harben Road. (3) Unit Construction Co. Ltd., 34 St. James' Street, London, S.W.1. (4) £371,408.

BOREHAM WOOD, HERTS. (1) R.C. church. (3) C. J. Sims Ltd., 2 Victoria Street, London, S.W.1.

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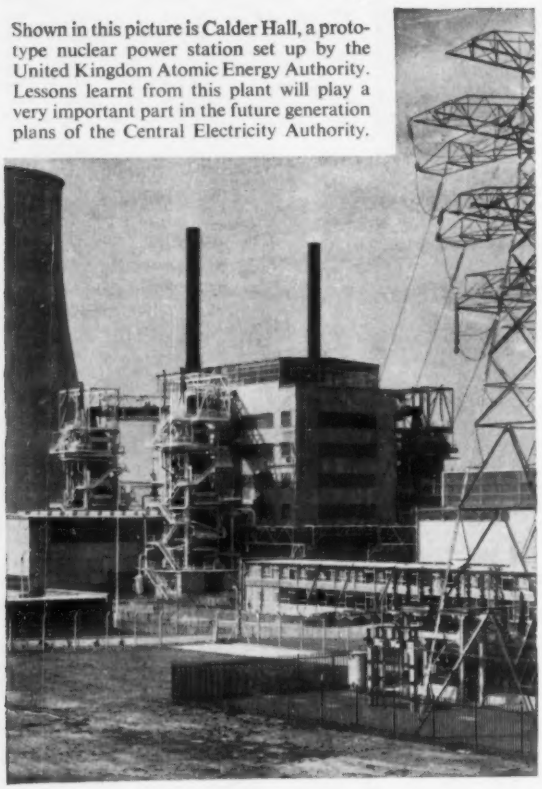
Electricity from Nuclear Energy

Shown in this picture is Calder Hall, a prototype nuclear power station set up by the United Kingdom Atomic Energy Authority. Lessons learnt from this plant will play a very important part in the future generation plans of the Central Electricity Authority.



The growing need for power

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Work will be started on the first two nuclear power stations in 1957, and by 1965 a total of 12 nuclear power stations, employing both gas- and liquid-cooled reactors, will be supplying current to the Grid. The rapid developments of the past 18 months have shown that the potential capacity of the earlier stations will be practically double the original estimate; this means that by 1965 we should be getting from nuclear power alone electricity equal to 10 to 12 million tons of coal.

As the demand for electricity grows, nuclear energy will become more and more important in supplying the power upon which the economic future of the country so largely depends.

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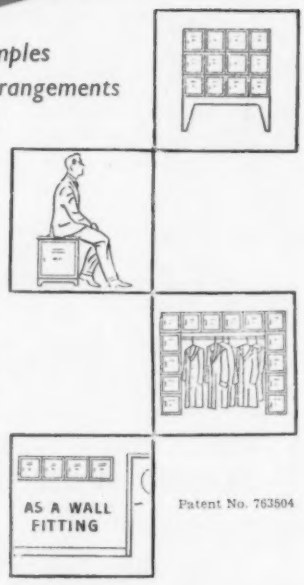

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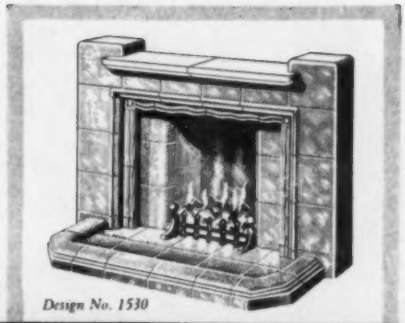

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● *Design No.* 1530. 48" x 35½" x 6½" *R.T.W. Fire opening* 16" x 22". 3½" *Recess. R/H*: 44" x 20" x 3" *high.*

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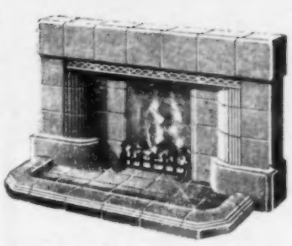
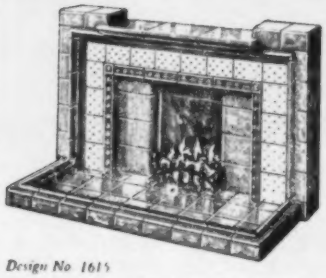


Design No. 1590



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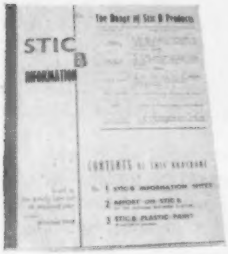

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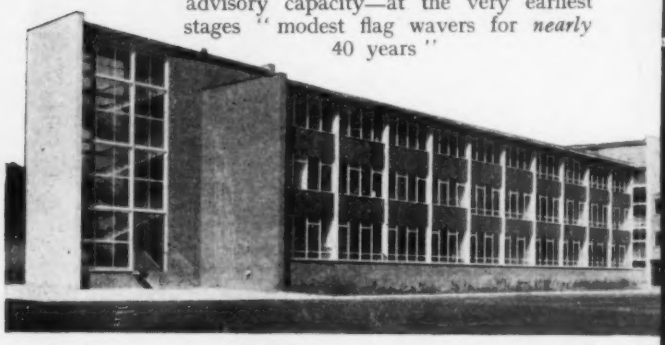

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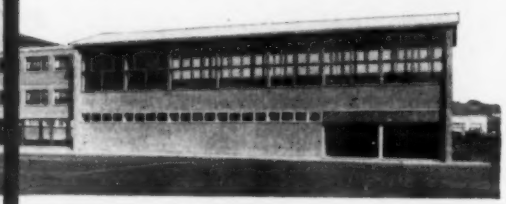

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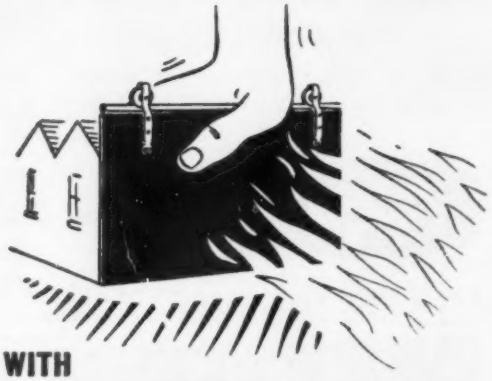

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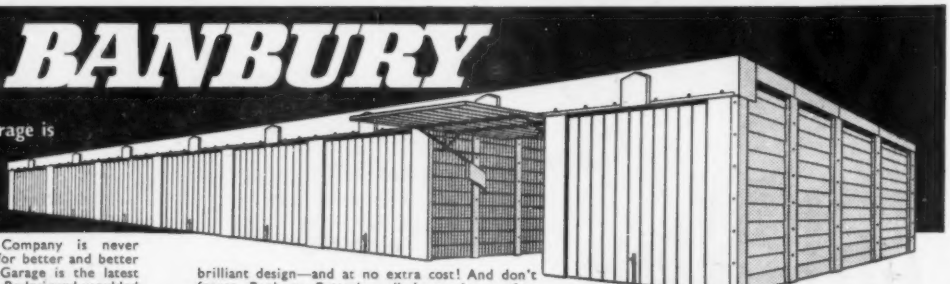

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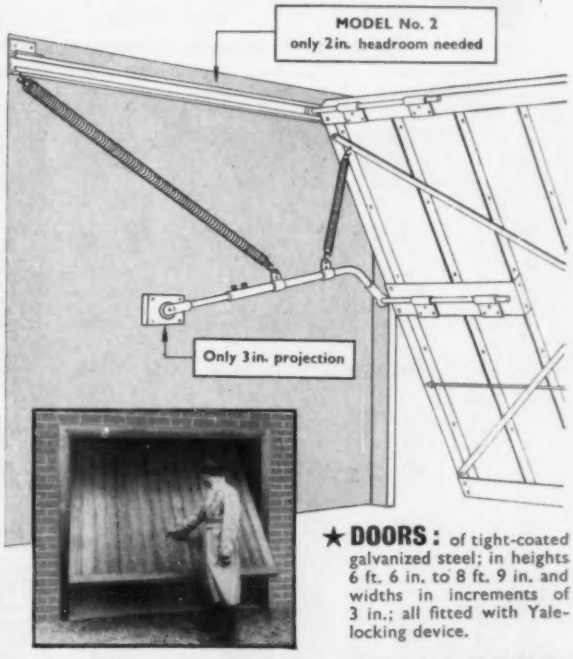

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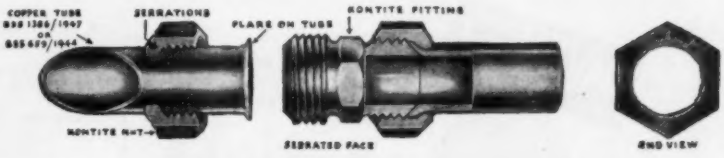

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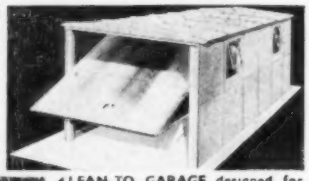

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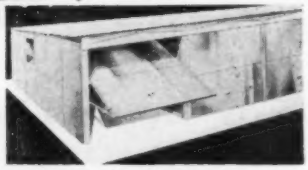

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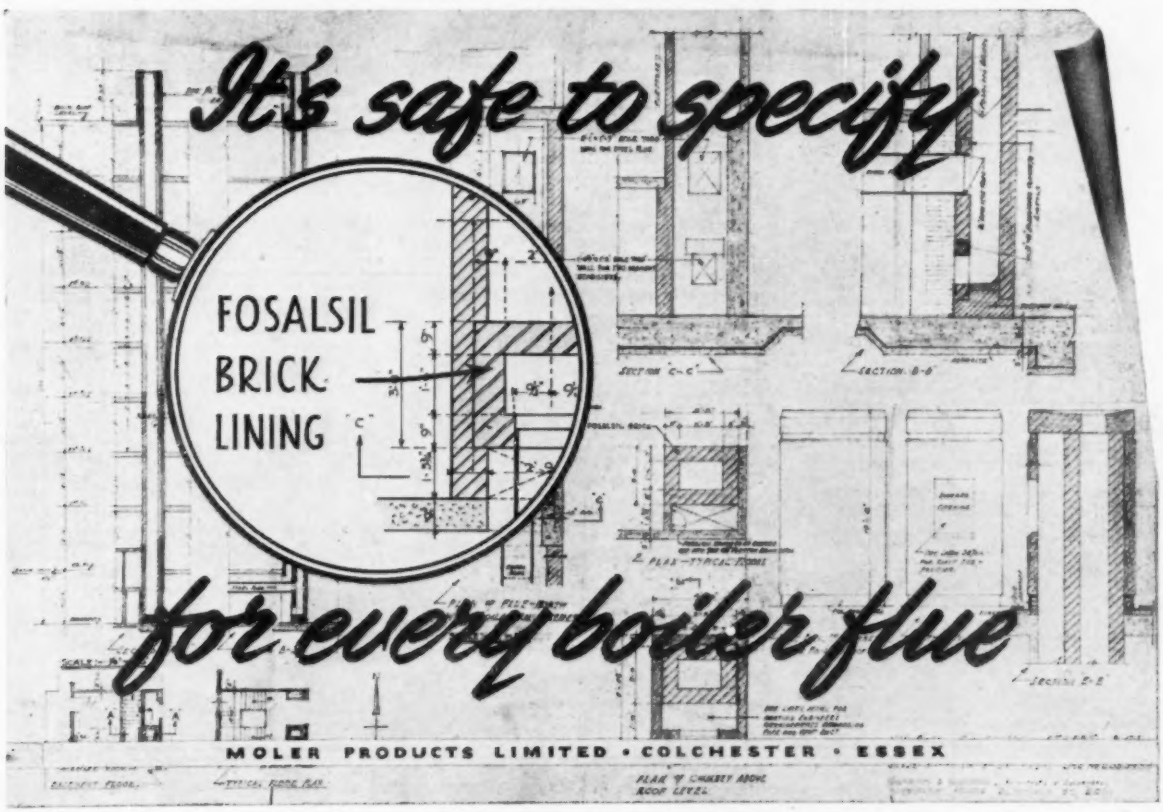

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Applicants must have passed an appropriate examination and have suitable experience.

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Applications, on forms to be obtained from the Town Clerk, Civic Offices, Swindon, must be returned by November 12, 1956. [2837

ARCHITECTURAL and Engineering Draughtsmen. The Civil Service Commissioners invite applications for a wide variety of permanent and pensionable posts in many different fields of Government work.

Interviews will be held at intervals as required.

Age at least 20 on June 1, 1956.

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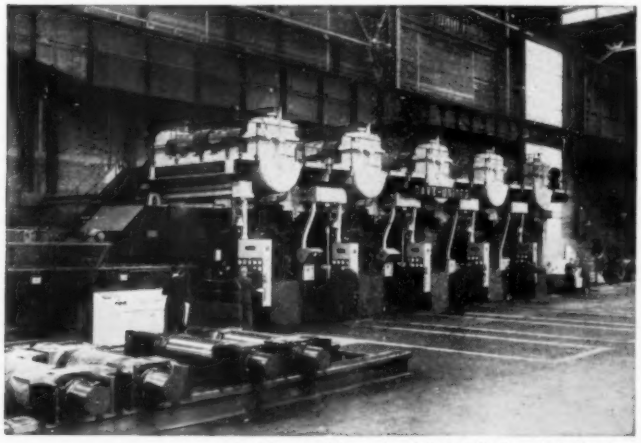

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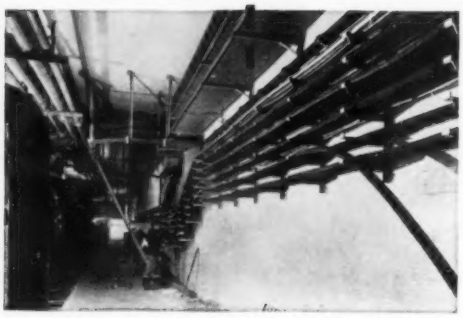

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